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The OIL WEEKLY

Edited Weekly at Houston, Texas SPENCER W. ROBINSON, Editor

TABLE OF CONTENTS

Features

PRODUCTION UPTURN ARRESTS TREND OF MARKET STRENGTH 57
By Kent Ridley
A. P. I. ANNOUNCES COMPREHENSIVE CONVENTION PROGRAM 59
REVISED PROGRAM, A. P. I. MEETING 61
EDITORIAL COMMENT 63
ADVANTAGES GAINED BY ADOPTION OF A. P. I. STANDARDS 64
By G. A. Thompson
SLUSH CONSISTENCY IS IMPORTANT IN ROTARY DRILLING 65
By L. J. Black
SOUTHERN WITHDRAWING AS WEST TEXAS CRUDE BUYER 66
By H. H. King
SEMINOLE DISTRICT OUTPUT HOLDING ABOVE 430,000 BARRELS 67
By Wallace Davis
CALIFORNIA STOCKS DROP MILLION BARRELS IN OCTOBER 69
By Brad Mills
YATES FIELD PRORATION PLAN CHANGE DUE FIRST OF YEAR 71
CHAMPANOLLE COMPLETION STARTS NEW DRILLING RUSH 72
CARBON BLACK PRODUCTION UNDER CONSERVATION RULES 73
By George Reid
GAS-LIFT INCREASES PRODUCTION AT SANTA FE SPRINGS 78
By Brad Mills
EXTENSION OF YATES FIELD FEATURES WEEK OF BIG WELLS 82
SAFETY AND CLEAN-OUT EQUIPMENT FEATURED IN GAS FIELD 83
By Jack Logan
JOHN DAVIDSON ROCKEFELLER 86

ANNUAL NEW EQUIPMENT REVIEW
See Index, Page 91

MEXICAN PETROLEUM COMPANY GETS DECISION IN MEXICAN OIL LAW TEST CASE 309
ANTICLINE ON NEQUIA ARCH, GREEN RIVER DESERT, UTAH 310
By H. C. Prommel, Consulting Geologist
TRADE COMMISSION READY TO REPORT REASONS FOR HIGH PRICES 314
By Staff Representative
RECONDITIONING PIPE LINE WITHOUT STOPPING SERVICE 317
IMPROVED CORE BARREL ONE RECENT OPERATION ADVANCEMENT 320
By Brad Mills
REPORT REVIEWS BUREAU OF MINES ACTIVITIES IN INVESTIGATING RECOVERY PROBLEMS 370

Departments

UNITED STATES PRODUCTION—A. P. I. FIGURES 325
WEST TEXAS PRODUCTION DETAILS 330
COMPLETIONS FOR THE PAST WEEK IN ALL U. S. FIELDS 332
PERMITS GRANTED FOR NEW WELLS DURING THE PAST WEEK 336
WILDCAT DRILLING REPORTS FROM ALL IMPORTANT AREAS 341
NEW EQUIPMENT, CATALOGS, BULLETINS AND BOOKS 99
SQUEAKS FROM THE BULL WHEEL 384
PERSONAL MENTION—MEN YOU KNOW 77
HOW OIL MEN PLAY 379
CRUDE OIL PRICE QUOTATIONS 326
IMPORTS AT PRINCIPAL PORTS 328
RECEIPTS OF CALIFORNIA OIL 328

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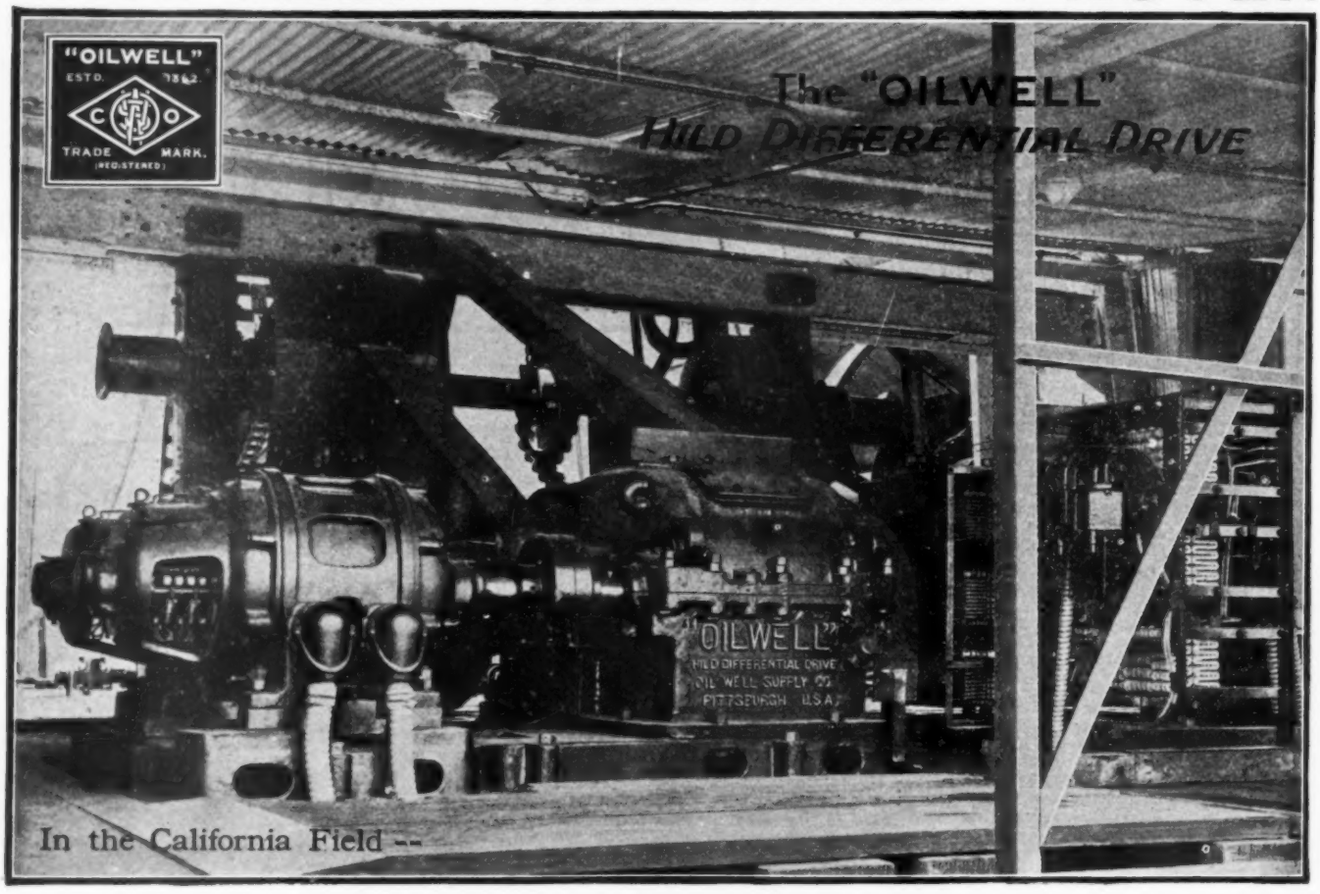
AUTOMATIC FEED *and* RETRIEVE HAVE BEEN THOROUGHLY PROVEN



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NEW YORK—LOS ANGELES—PITTSBURGH, U.S.A.—SAN FRANCISCO—TAMPICO—LONDON

WORLD'S OLDEST AND LARGEST MANUFACTURERS OF OIL FIELD EQUIPMENT

Production Upturn Arrests Trend Of Market Strength

Rejuvenation of Seminole wells is holding production in that area above expected levels, but decline there should start again soon

By KENT RIDLEY

SINCE the one source of market strength at this season lies in less production, there is scant encouragement of optimism in the fact that last week's estimated production was 31,400 barrels above the figure for the previous period, the first real definite upturn of the production curve in two months, but one which all but regains all of the ground lost since the decline started the first week in October.

With control in West Texas effected by limitation of pipe line outlet, Seminole continues the chief actor in the over-production drama, and from that sector comes the one glimpse of silver in the cloud: Well shooting in the Seminole pool continues to hold production there far above predictions of both producers and buyers. The consolation is that the shooting cannot go on much longer, and if Seminole's proven productive area had to depend altogether on current initial production it would not long continue in its present class.

It is evident that when the great flush production now being obtained by shooting and cleaning out of old wells is over, the area is due to pass quickly. Evidences of this are seen in the fact that within the past three weeks there has been a decrease of 79 operations in the five fields, and that if completed wells and new locations continue to run through the winter in proportion to their present ratio in the Seminole area, the program of activity will not hold out long. The area has proved itself to decline rapidly except in cases where big wells are added in quick order or unless old wells are revived for strong outputs.

It is pretty generally believed that beginning about the opening of 1928 that the crude situation in Oklahoma will be much brighter, this prediction being based on the theory that Seminole will drop rapidly when the real decline does set in.

Increase General

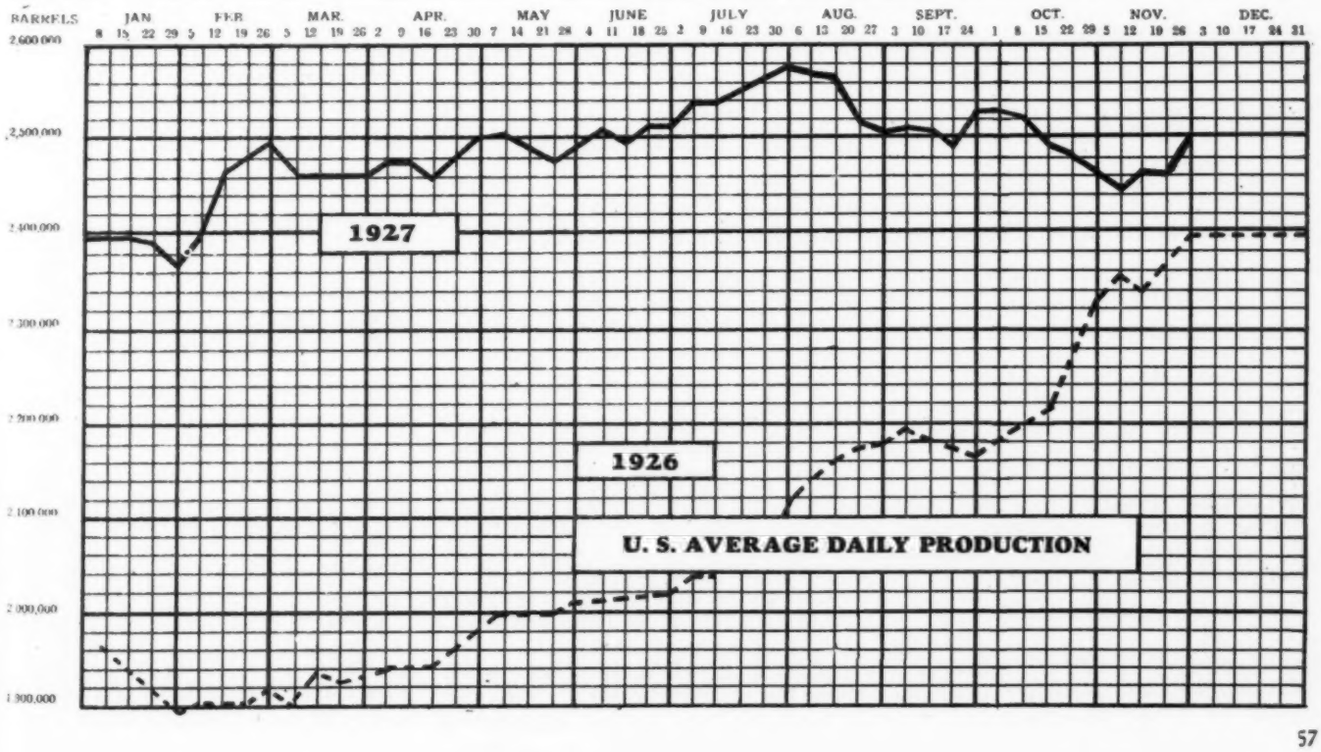
The production upturn reported in the A. P. I. estimate for last week brought the average to 2,498,350 barrels. Practically every section contributed to the increase, Arkansas and Louisiana, with negligible decreases, being the chief exceptions.

The largest increase in production was recorded in West Texas, where the daily average for the week was 240,900 barrels, more than 20,000 barrels higher than for the preceding week. Winkler County alone experienced an increase of over 13,000 barrels in its average daily yield, the new figure being 30,900 barrels; and Crane and Upton Counties showed a gain of about 6000 barrels. Outside of West Texas the fields of the state produced at practically the same rate as during the previous week.

Oklahoma contributed the second largest increase, the average being 775,000 barrels, a gain of 6650 barrels. The Seminole area was responsible for the rise, with Earlsboro showing an increase of over 10,000 barrels. Decreases in the Seminole and Little River pools did little more than counteract slight gains in the Bowlegs and Searight fields.

California's average was 626,000 barrels, an increase of about 2000 barrels; the Rocky Mountain States gained

UNITED STATES CRUDE PRODUCTION TREND



DETAILS ON CRITICAL FIELDS

Pool—	Oil Wells Completed	Total Initial Production	Initial Per Well	No. Producing Wells	Daily Production Barrels	Daily Production Per Well	Rigs Up	Wells Drilling
PANHANDLE								
Hutchinson County	1,076	541,090	503	985	57,985	59	5	29
Gray County	173	63,160	365	169	14,880	88	13	37
Carson County	176	58,655	333	156	7,610	49	..	7
Wheeler County	41	14,170	346	34	1,105	33	7	6
Totals	1,466	676,985	462	1,344	81,580	61	25	79
WEST TEXAS—								
Church & Fields	160	188,970	1,181	156	85,760	550*	4	18
Gulf-McElroy	54	49,050	908	54	20,305	376	1	2
Hendricks	23	70,260	3,055	28	30,485	1,089*	13	61
Yates	60	360,570	6,009	57	43,420	762*	30	40
Totals	297	668,850	2,252	295	179,970	610	48	121
OKLAHOMA—								
Seminole	1,119	1,467,448	1,311	1,022	430,521	421	19	177

*Production partially pinched.

3250 barrels, Wyoming being responsible for the higher figure; and the Eastern States showed an inconsequential increase.

New Wells

The initial production from all new wells reported in the United States during the past week amounted to 116,312 barrels, as compared with 94,568 barrels for the previous week, with Texas, California and Kansas registering increases of approximately 32,000, 7000, and 4500 barrels respectively, while Oklahoma and Montana contributed the only material decreases, about 10,000 barrels each.

While the total number of completions for the week was 432, an increase of 57, the increase in the number of producing oil wells was not proportionate, rising only from 233 to 237. The number of gas wells completed was 64, an increase of 34; and the failures numbered 131, an increase of 19.

In Texas 57 oil wells were completed, an increase of only seven as compared with the previous week, but they were larger wells, yielding 76,347 barrels while the 50 of the previous week furnished only 44,067 barrels of new oil. West Texas alone furnished 62,470 barrels of the State's total, with the new oil from Pecos and Winkler Counties amounting to approximately 32,000 and 25,000 barrels, respectively. The largest wells of the week were Mid-Kansas and Transcontinental's Yates 9-B in the Yates field, Pecos County, initial 14,500 barrels, and Roxana Petroleum Corporation's Hendricks 1-C in Winkler County, initial production 10,000 barrels.

In California 13 wells were brought in for 14,195 barrels initial, while during the preceding week 10 producers yielded 7295 barrels. There were 43 new producers in Kansas, a decrease of 16, and their combined initial was 19,004 barrels, a decrease of about 10,000 barrels. From 16 new producers Kansas furnished 5440 barrels of new oil, while during the previous week four wells yielded 1055 barrels.

New Wells

Two hundred and seventy-six permits to drill wells were issued during the week ending November 25, a decrease of 25 as compared with the number for the previous week. Texas issued only 135 as against 176; Louisiana 16, a decrease of four; and Arkansas five, the same number. Three states issued larger numbers of permits: Oklahoma 75, an increase of 17; Kansas 23, increase of 10; and California 22, an increase of one. Through November 25 the total number of permits issued in the above named states and in the Rocky Mountain States amounts to 14,819. At the corresponding date in 1926 the total was 23,557.

Gasoline Off

Other than the minor support offered lately by export buyers, the gasoline market in the North Texas district has been on an off season trend, with prices on all commodities somewhat weak at prevailing prices. Plant owners have been getting 6¾ cents per gallon for their best grades of export gasoline, and the U. S. motor grade of motor fuel is encountering little demand at six cents and a fraction under. Fuel oil and other burning oils are enjoying only a fair demand, with most of the trading in the former product coming from railroads. In contrast to this sluggishness in the refined market, North Texas refiners are finding spot crude scarce for this season of the year, and a few sales made lately involved the payment of a premium ranging from 5 to 10 cents per barrel above the posted price.

Refiners in the Texas Panhandle not protected by contracts for their crude supply are also using a small premium to obtain their requirements, and during the past week a plant at Borger is reported to have paid 95 cents per barrel for 50,000 barrels of storage oil, which commands a posted price of 75 cents per barrel at the well. However, this oil was conveniently located to the plant, and pipe line charges were eliminated from the transaction. Another sale of 70,000 barrels of storage oil was also reported to have been made by Roxana to the American Petroleum Company, which will move same via tank cars to Houston.

The crude situation in the West Texas district may be improved somewhat by the announcement of Humble that a line would be built immediately into the Hendricks field, where a number of brokers and independent crude buyers have been trying to trade with small producers for oil at 10 and 15 cents per barrel below the posted price of 60 cents. This field has registered a big gain in output lately, having averaged 30,485 barrels daily from 28 wells during the past week, with a number of tests in process of completion. Southern Crude Oil Purchasing Company discontinued buying outside oil in this flush area, excepting that bound by contract, thereby leaving the producers practically without a market outlet.

California

A policy of watchful waiting is being carried out in California, where the chief interest at present lies in a deepening campaign in one old field and an extensive development program in a newly discovered area.

The huge deepening program in the Long Beach field is being carried out as rapidly as possible. Only a few wells have been completed near 6000 feet, but all were large producers. Both workovers and new wells are being rushed with all the vigor that characterized the development of the upper sand several years ago. Just as the major companies announced that many more new locations would be made, several wells were reported in the deep sand and ready for completion. The remarkable thickness and nature of the deep sand practically guarantees a huge increase in production.

For a new field that is still questionable, developments on the Rincon structure may be regarded as unique. In the face of the Pan-American Petroleum Company's failure to cope with a very delicate water problem, more than a dozen locations have been made and several wells are already drilling. All the companies have a general idea of the log of the discovery well and they feel sure that they will be able to shut off the water found at different levels. It is believed that the next wells completed will be produced from above the water sand, since the Pan-American well prematurely flowed fairly clean oil from the top layers.

The five-cent reduction in fuel oil delivered to certain points along the Atlantic seaboard has slightly effected the stability of the California market in that commodity. The State had already had some trouble in meeting competition from the Eastern and Mid-Continent producers. The domestic and Pacific Coast demand has been unusually good, however.

The gasoline market continues very stable, with the local and Pacific Coast demand exceptionally good. Exports from the Los Angeles harbor increased materially during the past week.

There is little likelihood of a price change in California in the immediate future. Some heavy crude is going into storage, but the lighter grades are being refined as soon as produced.

A. P. I. Announces Comprehensive Convention Program

Every phase of oil business will be give attention in group sessions during eight annual session at Chicago

NEW YORK.—Aside from the work that will be accomplished in numerous group sessions, where specific topics will be treated thoroughly in addresses, papers, and discussions, the outstanding features of the eighth annual meeting of the American Petroleum Institute at Chicago on December 5, 6, 7 and 8 will be an election of 34 new directors and the consideration of recommendations for the creation of several new divisions of the Institute's activity.

The Chicago meeting will be held in the Stevens Hotel, and the official headquarters will be in Room 505-A. The Institute does not make reservations for its members, and all who expect to attend should not delay wiring the hotel for accommodations.

The usual one and one-half railroad fare on the "certificate plan" will apply for all members attending the meeting, and those making the trip are advised to be sure to ask the ticket agents for certificates when buying tickets and to have them validated at the Institute's registration and information desk upon arriving at the Stevens Hotel.

On Tuesday afternoon, December 6, the meeting will be officially opened with a general session; but preliminary meetings will be held by the various committees on Friday, December 2, and on Monday, December 5. The time and place of each of these committee meetings are indicated elsewhere in this publication in a complete program of the convention. There are 20 or more committees which will participate in these preliminary meetings, and they have an aggregate membership of about 750.

Directors Sessions

The board of directors, composed of 61 representative men who are well known in and out of the industry, will be in session all of three days—December 5, 7 and 8. The board will consider the reports of numerous committees and discuss and act upon a variety of matters materially affecting the industry.

The terms of office of the following directors expire concurrently with the Chicago meeting: Mark L. Roqua, R. B. Brooks, W. C. Franklin, J. D. Collett, Frank Phillips, J. Edgar Pew, E. W. Clark, T. A. Dines, P. M. Miskell, F. A. Pielsticker, Charles L. Suhr, E. T. Wilson, H. B. Earhart, A. P. Coombe, H. E. Felton, A. B. Macbeth, D. E. Buchanan, Herbert L. Pratt, E. L. Doheney, J. F. Lucey, George H. Jones, Wallace E. Pratt, E. C. Lufkin, Thomas A. O'Donnell, William N. Davis, E. B. Reeser, H. F. Sinclair, George S. Davison, J. W. Van Dyke, Henry L. Doherty, L. V. Nicholas, W. S. Fitzpatrick and D. M. Folsom and one place made vacant by the death of J. C. Donnell.

Election of Directors

The vacancies created by these expirations will be filled in the following manner. The board of councillors, composed this year of 540 oil men, will meet in executive session Tuesday morning and choose their nominees for directors. This board will report its nominations to the general session meeting of institute members Tuesday afternoon, and the members will then act upon the report and elect whomsoever they desire as directors. There is only one exception; namely, that the board of directors, after the newly elected directors have been seated, elect directors to fill three out of the 34 vacancies.

Due to the demand for group sessions where specific topics can be discussed and to the pressure of business on the docket of the board of directors, only one general session will be held,—the afternoon of December 6. At this meeting the president of the Institute will give his address; the report of the board of councillors will be received, the election of directors will take place, and the members will be shown the new six reel petroleum industry moving picture film, "The Story of Petroleum," made under the direction of the Bureau of Mines in cooperation with the Institute.

Group Sessions

On Wednesday morning, December 7, the group sessions will begin, and will occupy the time of the members during morning, afternoon, and evening Wednesday, and during the morning and afternoon Thursday. The meeting will come to a close Thursday evening with the annual dinner and entertainment in the Grand Ball Room.

A wide range of subjects of great importance to the oil industry will be taken up in the group meetings. They have been arranged by general topics, and the various subjects will be treated in addresses and papers by selected speakers. Opportunity will be given for brief general discussion of the subject after each speaker has finished. The time and place of each of these group meetings are shown in the program.

Motor Fuel

The group session on motor fuel will be of especial interest to all those interested in the motor fuel research program which has been under way at the Bureau of Standards the past several years. The work has been financed jointly by the Institute, the National Automobile Chamber of Commerce, the Society of Automotive Engineers and the government. Three papers covering distillation tests, engine acceleration and detonation will be presented by government representatives, and one on methods of measuring the anti-knock characteristics of motor fuels.

The cooperative research on motor fuel of these organizations has been in existence for a number of years and has proven of value in securing the solution of problems of common interest to the automotive and petroleum industries, and has thus benefited the public. Every car owner is interested in quick starting and rapid acceleration and some of them are also interested in the anti-knock rating of the fuel.

The anti-knock rating is important from the standpoint of the degree of compression that can be obtained in the automobile engine without knocking. The higher the compression, the greater the mileage from a gallon of gasoline; but higher compression results in increased tendency to knock, with the result that the anti-knock rating of the gasoline determines the design of the engine as regards allowable compression. Some car manufacturers are taking advantage of the increase during the last few years in the anti-knock rating of gasoline sold throughout the country to increase the compression of their engines.

Standardized Equipment

Two sessions have been arranged for those interested in standardized oil field equipment. Besides brief reports of the 10 committees developing standard specifications there will be interesting and authoritative papers relating to the value and use of equipment made in accordance with the standard specifications. It is expected that these two group sessions will appeal especially to oil company purchasing agents and field superintendents,

Aside from the report of the committee on Uniform Methods of Accounting and the open discussion related to the uniform practice which the committee will recommend, all oil men engaged in the accounting end of the business will find the papers to be presented at the two group sessions on oil accounting of value. Cooperation between executives and comptrollers, machine handling of accounts

(Continued on page 62)

Revised Program

Eighth Annual Meeting, American Petroleum Institute

December 5, 6, 7 and 8, 1927

Stevens Hotel, Chicago

The American Petroleum Institute makes the following announcement of the revised program in connection with its Eighth Annual Meeting to be held at the Stevens Hotel, Chicago.

COMMITTEE MEETINGS

Immediately preceding or during the Eighth Annual Meeting the following named committees will meet at the Stevens Hotel:

FRIDAY, DECEMBER 2, 1927

(and until work is completed)

10:00 A.M. Committee on Gas Conservation. (Private Dining Room No. 3.)

10:00 A.M. Committee on Uniform Methods of Oil Accounting. (Private Dining Room 5.)

MONDAY, DECEMBER 5, 1927

STANDARDIZATION COMMITTEES

10:00 A.M. Committee on Standardization of Oil Steel Storage and Production Tanks. (Room 422-A.)

10:00 A.M. Committee on Standardization of Specifications for Steel and Iron Pipe for Oil Country Tubular Goods. (Room 423-A.)

10:00 A.M. Committee on Standardization of Standard Rigs and Derricks. (Room 430-A.)

10:00 A.M. Committee on Standardization of Bolted Tanks. (Room 435-A.)

10:00 A.M. Committee on Standardization of Wire Rope and Manilla Cordage. (Room 439-A.)

10:00 A.M. Committee on Standardization of Belting. (Room 440-A.)

10:00 A.M. Committee on Standardization of Pumping Equipment and Engines. (Room 444-A.)

10:00 A.M. Committee on Standardization of Rotary Drilling Equipment. (Room 445-A.)

10:00 A.M. Committee on Standardization of oil Field Boilers. (Room 450-A.)

10:00 A.M. Committee on Standardization of Rig Irons. (Room 451-A.)

10:00 A.M. Committee on Standardization of Cable Tool Joints. (Room 452-A.)

OTHER COMMITTEES

9:30 A.M. Committee D-2 on Petroleum Products and Lubricants. (A. S. T. M.) (West Ball Room.)

10:30 A.M. Committee on Railroad Transportation and Mechanical Sub-Committee. (Private Dining Room 4.)

10:30 A.M. Committee on Oil Pollution. (Private Dining Room 9.)

2:00 P.M. Committee on Fire Prevention. (West Ball Room.)

8:00 P.M. Committee on Automotive Transportation. (Private Dining Room 4.)

Note—The following committees will meet at the time and place indicated to committee members by the chairman of each committee:

Committee on Public Relations.
Committee on Vapor Pressure.
Committee on Tank Car Calibration.

DIRECTORS' MEETING

10:30 A.M. Meeting of Board of Directors. (Private Dining Room No. 1.)

Luncheon for members of the board at noon. (Private Dining Room No. 2.)

TUESDAY, DECEMBER 6, 1927

MORNING

10:30 A.M. Meeting of the Board of Councillors. (North Ball Room.) To nominate candidates for election as members of the Board of directors.

AFTERNOON

2:30 P.M. *General Session.* (Grand Ball Room.)

The President's Address: E. W. Clark.
Report of the Board of Councillors.
Election of Directors.
The Story of Petroleum: First showing of the six-reel motion picture film produced under the direction of the United States Bureau of Mines in co-operation with the American Petroleum Institute.

WEDNESDAY, DECEMBER 7, 1927

Note—There will be no general session on Wednesday. The morning, afternoon, and evening will be devoted to group meetings, arranged by general topics, at which the various subjects will be treated in addresses and papers by selected speakers. Opportunity will be given for brief general discussion of the subject after each speaker has finished.

MORNING

10:30 A.M. Meeting of new Board of Directors. (Private Dining Room No. 1.)
Luncheon for members of the board at noon. (Private Dining Room No. 2.)

10:00 A.M. Group Meetings:

Group 1—General Topic: MOTOR FUEL. (North Ball Room.)

Report on Co-operative Motor Fuel Research at the U. S. Bureau of Standards During the Current Year:
"An Interpretation of A. S. T. M. Distillation Test for Motor Fuel," O. C. Bridgeman and C. S. Cragoe.
"Some Factors in Engine Acceleration," R. Best and J. O. Eisinger.
"A Detonation Survey," H. K. Cummings.
"A Comparison of Methods of Measuring the Knock Characteristics of Fuels," Dr. Graham Edgar, Ethyl Gasoline Corporation.
General Discussion.

Group 2—General Topic: STANDARDIZED OIL FIELD EQUIPMENT. (Grand Ball Room.)

Condensed Reports of the Following Standardization Committees:
Committee on Belting for Oil Country Use.
Committee on Oil Field Boilers.
Committee on Rig Irons.
Committee on Standard Rigs and Derricks.
Committee on Wire Rope and Manilla Cordage.

SPECIAL PAPERS:
"Some Advantages of Standardized Rigs and Derricks and Rig Irons," C. D. Watson, Carter Oil Company, (Illustrated with slides).
"A. P. I. Belting," F. O. Prior, Midwest Refining Company, (Illustrated with slides).
"The 'Why' of A. P. I. Standard Boilers," R. G. Hamaker, Humble Oil and Refining Company. (Illustrated with slides.)
General Discussion.

Note—The sessions on standardization this year will be of special interest to field superintendents, etc., and will be confined principally to the advantages and the results gained from the use of A. P. I. standards.

Group 3—General Topic: OIL ACCOUNTING. (West Ball Room.)

Report of Committee on Uniform Methods of Accounting, M. W. Mattison, Chairman.
General Discussion of Report.
"Co-operation Between Executives and Comptrollers," Prof. Roy Kester, Columbia University.
"Machine Handling of Accounts Payable," George H. Forster, Union Oil Company of California. General Discussion.

Group 4—General Topic: TRANSPORTATION. (South Ball Room.)

Railroad:
"Testing Tank Car Valves," D. V. Stroop, U. S. Bureau of Standards.
"Uniformity in Industrial Side Track Agreements," J. C. Irwin, Committee XX of American Railway Engineering Association.
General Discussion.

Automobile Truck:
"Handling Motor Truck Equipment," Roy F. Fike, Mid-Continent Petroleum Corporation.
"Motor Vehicle Transportation," J. F. Winchester, Standard Oil Company of New Jersey.
General Discussion.

AFTERNOON

2:00 P.M. Group meetings:

Group 1—General Topic: REFINERY TECHNOLOGY. (North Ball Room.)

"Pipe Still Distillation," A. G. Peterkin, Jr., The Atlantic Refining Co.

"Recovery of Acid from Sludge," W. N. Davis, Standard Oil Company of California.

"Vacuum Distillation," Frank A. Howard, Standard Development Company.

"Some Facts Concerning Vapor Phase Cracking," Luis de Florez, Consulting Engineer.

"Improved Method of Treating Cracked Naphtha," Ralph A. Halloran, Standard Oil Company of California.

"Strength of Steel at Elevated Temperatures with Particular Reference to Safety Factor," T. McLean Jasper, A. O. Smith Corporation.

General Discussion.

Group 2—General Topic: DEVELOPMENT AND PRODUCTION ENGINEERING. (Grand Ball Room.)

"Value of Gas in the Conservation of Oil," Dr. W. P. Haseman, Marland Oil Company.

"Portland Cement for Shutting Off Water in Oil Wells," J. F. Hough, Portland Cement Association. (Illustrated with slides.)

"The Advent and Place of the Development and Production Engineer in the Oil Industry," A. C. Rubel, Union Oil Company of California.

General Discussion.

Group 3—General Topic: OIL ACCOUNTING. (West Ball Room.)

"Realization Methods in Refining Costs," M. A. Chambers, Panhandle Refining Company.

"Gasoline Taxes in Accounting," George F. Smith, Continental Oil Company.

"I. C. C. Classification of Pipe Line Accounts," Ralph Hare, Prairie Pipe Line Company.

"Problems of Oil Refining Costs," R. D. Matthews, Union Oil Company of California.

General Discussion.

Group 4—General Topic: FIRE PREVENTION AND SAFETY. (South Ball Room.)

"Successful Methods of Plant Protection from Fire," C. J. Cutting, The Atlantic Refining Company.

"Static—What It Is and How It Is Produced," (with experiments), Dr. J. Barton Hoag, University of Chicago.

"Fire Laws for the Oil Industry," Frank A. Epps, Tide Water Oil Company.

"The Industrial Safety Problem," W. H. Cameron, National Safety Council.

'Preventing Accidents in the Petroleum Industry," H. N. Blakeslee, Petroleum Section, National Safety Council.

EVENING

8:00 P.M. Group Meetings:

Group 1—General Topic: REFINERY TECHNOLOGY. (North Ball Room.)

The meeting will be devoted to a general discussion of problems of refinery technology.

Note—If the board of directors authorizes the creation of a Division of Refinery Technology, as recommended by the Committee on Technical Relationships, the members of the Institute present will elect the officers of the Division for the year 1928 and discuss plans of activity for the Division, including the organization of geographical sections.

Group 2—General Topic: DEVELOPMENT AND PRODUCTION ENGINEERING. (Grand Ball Room.)

The meeting will be devoted to a general discussion of problems of development and production engineering.

Note—If the board of directors authorizes the creation of a Division of Production Engineering, as recommended by the Committee on Technical Relationships, the members of the Institute present will elect the officers of the Division for the year 1928 and discuss plans of activity for the Division, including the organization of geographical sections.

Group 3—General Topic: OIL ACCOUNTING. (West Ball Room.)

The meeting will be devoted to a general discussion of problems of oil accounting.

Note—If the board of directors authorizes the creation of a Division of Oil Accounting, as recommended by the Committee on Uniform Methods of Oil Accounting, the members of the Institute present will elect the officers of the Division for the year 1928 and discuss plans of activity for the Division, including the organization of geographical sections.

THURSDAY, DECEMBER 8, 1927

Note—Thursday morning and afternoon will be devoted to group sessions, arranged by general topics, at which the various subjects first will be treated in addresses and papers by selected speakers. After each speaker has finished, opportunity will be given for discussion of the subject.

MORNING

10:30 A.M. Meeting of Board of Directors. (Private Dining Room No. 1.)

Luncheon for members of the board at noon. (Private Dining Room No. 2.)

10:00 A.M. Group Meetings.

Group 1—General Topic: NATURAL GASOLINE. (North Ball Room.)

Note—The Natural Gasoline Association of America has arranged the program for and is co-operating with the Institute in the holding of this group session.

"Economics of the Natural Gasoline Industry," Dr. E. R. Lederer, Texas & Pacific Coal and Oil Company.

"Vapor Pressures of Natural Gasoline," G. G. Oberfell, Phillips Petroleum Company.

"Natural Gasoline as a Chemical Material," Emby Kaye, Skelly Oil Company.

General Discussion.

Group 2—General Topic: STANDARDIZED OIL FIELD EQUIPMENT. (South Ball Room.)

Condensed Reports of the following Standardization Committees:

Committee on Cable Drilling Tool Joints.

Committee on Rotary Drilling Equipment.

Committee on Oil Country Tubular Goods.

Committee on Pumping Equipment and Engines.

Committee on Steel Storage Tanks.

SPECIAL PAPERS:

"Results of Usage and Advantage of Standard A. P. I. Taper Joints for Rotary and Cable Tool Drilling," R. A. Wilson, Guiberson Corporation. (Illustrated with slides.)

"Purchasing A. P. I. Standardized Material," R. M. Ketchum, General Petroleum Corporation.

"Advantages and Results of Experiences in the Use of A. P. I. Standards on Pumping Equipment, *i.e.*, Tubing, Working Barrels and Parts, Sucker Rods, Etc.," T. E. Swigart, Shell Company of California. (Illustrated with slides.)

"Evaluating Wire Rope Life," (Speaker to be announced.)

General Discussion.

Group 3—General Topic: TAXATION—FEDERAL, STATE AND MUNICIPAL. (West Ball Room.)

"Federal Taxation," A. W. Gregg, former assistant to the Secretary of the Treasury.

"State and Municipal Taxation," Frank E. Packard, Standard Oil Company, (Indiana).

General Discussion of Problems of Taxation.

Group 4—General Topic: CORROSION OF OIL INDUSTRY EQUIPMENT. (Grand Ball Room.)

"Corrosion in Refinery Equipment," Gustav Egloff, Universal Oil Products Company.

"Refinery Corrosion Problems," Brian Mead and Stewart Coleman, Humble Oil & Refining Company.

General Discussion of Refinery Corrosion Problems.

"Report of A. P. I. Temporary Committee on Corrosion and digest of Answers to Questionnaire Issued by Committee," F. N. Speller, Chairman, National Tube Company.

General Discussion.

AFTERNOON

2:00 P.M. Group Meetings.

Group 1—General Topic: MARKETING PETROLEUM PRODUCTS. (North Ball Room.)

"What Price Free Equipment?" B. H. Anglin, Indian Refining Company.

"Credit," John D. Gill, The Atlantic Refining Company.

"Fields for Increased Consumption of Petroleum Products, Automatic House Heating, Etc.," Harry D. Freuauff, Henry L. Doherty & Company.

"Double Standards," L. V. Nicholas, Independent Oil Men of America.

General Discussion of Marketing Problems.

Group 2—General Topic: FUNDAMENTAL RESEARCH IN PETROLEUM. (West Ball Room.)

Note—This group meeting will be de-

voted to a general discussion of the Institute's program of fundamental research in petroleum physics, chemistry and geology financed through funds donated by Mr. John D. Rockefeller and the Universal Oil Products Company.

Brief talks will be made by three members of the Central Petroleum Committee of the National Research Council, to-wit:

Dr. H. S. Taylor, Professor of Physical Chemistry at Princeton University, and Chairman of the Central Petroleum Committee;

Dr. Frank C. Whitmore, Professor of Chemistry at Northwestern University, and Chairman of the Division of Chemistry and Chemical Technology, National Research Council; and

E. DeGolyer, Amerada Petroleum Corporation and member Committee on Studies in Petroleum Geology of the National Research Council.

Following these talks, it is expected that those interested in this general topic will participate in a round table discussion with especial reference to co-operation between technical men of oil industry and the research fellows.

Group 3—General Topic: REGULATION—FEDERAL, STATE AND MUNICIPAL. (South Ball Room.)

"Federal Regulations," T. K. Schumuck, The Texas Company.

"State and Municipal Regulations," (two papers), W. T. Holliday, Standard Oil Company (Ohio); Edwin S. Hall, Standard Oil Company (New Jersey).

General Discussion of Problems of Regulation.

Group 4—General Topic: CORROSION OF OIL INDUSTRY EQUIPMENT. (Grand Ball Room.)

"Corrosion of Tankers and Marine Equipment," Oliver Duke, Sun Oil Company.

"Pipe Line Corrosion," A. S. Jones, Associated Pipe Line Company.

"Reconditioning of Pipe Lines,"—A motion picture film.

"Requirements of Good Protective Coatings," W. H. T. Thornhill, Wailes-Dove-Hermitson Corporation.

General Discussion Pipe Line Protection.

General Discussion of Corrosion of Oil Well Equipment.

Note—The Institute's Temporary Committee on Corrosion will arrange an exhibit of protective coatings for equipment which will be shown to those interested in the subject of corrosion in the Writing Room, second floor, Stevens Hotel.

EVENING

8:00 P.M. Annual Dinner. (Grand Ball Room.)

Playlet: "So's Your Oil Man," California Wildcats.

The Institute's official headquarters during the meeting will be in Room 505-A of the Stevens Hotel.

The Institute's registration and information desk will be open to receive registrations from Monday morning, December 5, to Thursday evening, December 8. There is no charge for registration. All who attend are requested to register. A daily bulletin is published and distributed during the meeting containing the list of those registered. The registration and information desk will be located in the reception room of the Grand Ball Room.

The official press headquarters during the meeting will be in Room 457 of the Stevens Hotel.

The official headquarters of the Division of Standardization during the meeting will be in Room 421-A.

As a courtesy to the National Tube Company, the Institute announces its invitation to all members attending the Chicago meeting to visit its Gary Works on Friday, December 9, the day after adjournment of the Institute meeting.

A. P. I. Announces Comprehensive Convention Program

(Continued from page 59)

payable, realization methods in refining costs, gasoline taxes in accounting, I. C. C. classification of pipe line accounts and handling refinery accounts will be topics of discussion as well as such other items which the accounting men present wish to discuss.

Transportation

Railroad and motor truck transportation will be the topic for one group session. Traffic and transportation men will find a discussion of problems incident to developing a uniform side track agreement, led by a representative of the carriers, of especial importance. Handling fleets of motor truck equipment and the use of motor vehicles in transporting oil products will be thoroughly discussed in two papers and otherwise and should make this group session attractive to men struggling with motor truck problems.

All refinery men will be interested in the Refinery Technology group session where such problems as pipe still distillation, recovery of acid from sludge, vacuum distillation, vapor phase cracking and improved methods of treating cracked naphtha will be discussed.

Safety Measures

Fire prevention and safety are kindred subjects about which every oil man is concerned. Interesting topics will be presented for discussion at this session such as succesful methods of protecting plants from fire, what static electricity is and how it is produced, fire laws for the industry and what the Petroleum Section of the National Safety Council, composed of oil men, is doing to aid in the prevention of accidents in the industry.

In the evening of December 7 three group sessions have been arranged without programs. It is expected that the refinery technologists, the development and production engineers and the oil accountants will have numerous problems for discussion which cannot be taken up and discussed in round table fashion at the group sessions where programs have been arranged. These three sessions will give them ample opportunity for full discussion.

Creation of New Divisions

Committees have recommended the creation of several new divisions of the Institute's activity: a Division of Refinery Technology, a Division of Production Engineering and a Division of Oil Accountancy. If, after consideration of the recommedation and the finanacial problems involved in enlarging the Institute's activity, the board of directors authorize the formation of these new divisions, the members of the Institute present can proceed to make effective whatever plan of organization that may be authorized, including the election of chairman and vice-chairman and discussion of plans for divisional activity.

The group session on Taxation—Federal, State and Municipal, with papers by the former assistant to the Secretary of the Treasury and an oil attorney with wide practical experience in State and municipal taxation problems will attract wide attention and the discussions of problems of taxation which follow should be of value to the entire industry.

Corrosion

Corrosion of oil industry equipment is a topic of wide interest and discussion. Two group sessions will be held when the whole subject will have appropriate discussion. A special committee has recommended that the industry attack cooperatively some or all of these corrosion problems and this committee will present the result of information it developed which led it to make the recommendation. The committee is arranging an exhibit of protective coatings.

One group session is to be devoted to a discussion of problems related to the marketing end of the business.

Research

There is being expended under the Institute's direction a $500,000 fund, provided by John D. Rockefeller and the Universal Oil Products Company, for fundamental research in petroleum. The National Research Council formed a Central Petroleum Committee to cooperate with the Institute in the selection of projects for investigation and the personnel to conduct same. Many projects are under way in various American colleges and universities. Papers are to be presented at a group session by the chairman and two members of the Central Petroleum Committee. One is a physicist, one a chemist and one a geologist. Following these papers, it is expected to have a round table discussion with especial reference to cooperation between technical men of the industry and the research fellows.

Another group session that will create widespread interest is the one on Regulation—Federal, State and Municipal. Papers will be presented by able oil attorneys who have had contact with regulation of the oil men's business from all angles and a general discussion of the problem will follow.

The closing event of the annual meeting will be the annual dinner, during which the famed organization of oil men known as the California Wildcats will produce a playlet entitled "So's Your Oil Man."

EDITORIAL COMMENT

A REVIEW of the items developed during 1927 by the manufacturers of oil field equipment, as revealed in the detailed descriptions contained in this New and Improved Field Equipment Issue, reveals again the rapid strides being made in improving methods of oil production and oil handling. This advancement is, of course, aside from advancement made in methods other than through the shape and size of the tool applied, as it is debatable whether the engineers of the field or of the shop have made the most advancement during the year in review.

The function of the producing end of the oil business, beginning with the geologist and including every step through to delivery of the crude into the tanks of the refineries, is to make that delivery at minimum cost. Such progress has been made in this that at this time, with the bulk of oil coming from greater average depths and in many instances transported greater distances, the cost of crude delivered at the refineries is lower than in any previous normal period, and this without free flush production, except from Seminole. And that area, it is generally conceded, would be but mediocre except for application of superior engineering skill in producing the wells by artificial flow methods.

It is in the production of oil through the air-gas lift that the greatest progress has been made during recent months. Although it is a historical fact that this method is not new, and that it was used years ago in producing both oil and water, it has been given its greatest practical use within the last few months, first in California in handling production from great depths, and with the greatest effect in the Seminole area, where its application has resulted in such prolific recovery as to endanger market stability through over supply of crude.

There are alarmists who see in the present situation alarming symptoms of impending disaster to the industry—economic disaster through over-production and eternal ruin through exhaustion of the supply. To the first of these threats the answer of the production department, with its own engineering skill and that contributed by their associated tool makers, is a challenge to find uses for the oil which is being produced, and to the second, demonstrated assurance that such supplies of oil as have been deposited in the earth, no matter how remotely, will be made available at costs which will never embarrass the salesmen of the industry in their competition with fuels or lubricants of even approximate equal worth.

Advance in engineering knowledge is so closely associated with improved equipment that it would be difficult to separate them for judging of their relative improtance. But it is safe to say that the constant improvement in equipment of all classes applied to drilling, production, handling and storage of oil, costs could not have been kept to present levels without absolute ruination of the industry.

Equipment makers are contributing further to lowered costs through their co-operation with the standardization program of the American Petroleum Institute, and it will be noted how frequently application to those standards is mentioned in the descriptions of the new items which have been produced during the current year. The standardization program will be given further acceleration during the coming session of the Institute at Chicago, when representative engineers of the producers and the equipment manufacturers will give practical demonstration of their full spirited co-operation in lowering costs of producing oil.

* * *

PROGRESS made in any branch of industry is but a monument to the unselfish devotion of a few individuals of their personal time to the general good. That statement is made here as a predicate for assuming the privilege of speaking for the collective oil industry of the Mid-Continent, and particularly of Texas, of the appreciation of the services of J. D. Collett, who has recently completed five years as the executive head of the Texas Division of the Mid-Continent Oil and Gas Association. In such association work it is the custom that the real work is given attention by the executive staff, with member participation only to the extent of financial support and an occasional meeting to elect officers. During the five years of Mr. Collett's administration many helpful things have been done by the association, and we only express the sentiment of each individual Texas oil man when we say that his work has been, and is, appreciated.

* * *

AMONG the other objections to asking for any modication of anti-trust or other laws for the special benefit of the oil industry, it might be kept in mind that investigating bodies would have a new incentive for keeping an eye on what is doing. From an economic standpoint, all the saving which might accrue because of artificially raised prices brought about by conservation, would have to be spent in answering questionnaires and sending representatives to appear before investigating bodies. And the lawyers would have a wonderfully prosperous period while the courts were deciding whether or not the law could be passed.

Advantages Gained by Adoption Of the A. P. I. Specifications

By G. A. THOMPSON
Purchasing Agent, The Empire Companies and President Tulsa Purchasing Agents Association

THE writer has nothing new to say on this subject. It would be very hard to add anything to what has already been said since the standardization of oil field equipment was first conceived in the minds of oil men. Repetition of this kind can only be justified with the belief that these ideas with reference to the advantages of standardization need to be placed and fixed in the oil man's mind in such a way that whenever he is considering oil field equipment he will think about standardization. As a riveter hammer on the same spot and the same rivet until the rivet is clinched, so it will be necessary to reiterate the advantages of standardization until they are firmly placed in the minds of the oil men.

We will pass quickly over the general advantages, which are: First, better values, because the A. P. I. specifications are better than the average specifications that have existed heretofore and may be bought in most cases at no greater, or less, costs. Second, better service. At the same or less investment the manufacturers, vendors, and oil companies will carry stocks that will take care of our requirements more satisfactorily because of the reduction in the number of designs and sizes. Moreover, parts will be interchangeable on different manufacturers' equipment, making is possible to buy items that will fit together of different manufacturers' make, and thereby eliminating in many cases long waits and loss of production. Third, it will make possible lower inventories, due to elimination of carrying a great multiplicity of designs and sizes of different manufacturers. The definition of standardization summarizes its advantages:

Standardization is the elimination of superfluous variety and the establishment of uniform specifications adequate to meet the requirements of all members of the industry.

What the final adoption of the American Petroleum Institute's standards will finally mean to the oil industry we can only conjecture. A little over a year ago Mr. H. J. Struth wrote in one of the oil journals that the purchases of the entire oil industry are approximately $675,000,000 per annum. Of this amount $385,000,000 is for production equipment. It would doubtless be conservative to estimate that 75 per cent of all oil production equipment is included in our standardization program. Seventy-five per cent of $385,000,000 is $288,750,000. Students of this subject would likely estimate from 5 to 10 per cent savings by the adoption of these standards. This would mean from $14,437,500 to $28,875,000 savings. Therefore we may estimate that the full adoption of the American Petroleum Institute's standards would save the oil industry at least $14,437,500 per year.

Specific Items

The advantages of standardization, however, may be more forcibly impressed by giving specific consideration to some of the items on which standards have already been set up. The figures that follow were not compiled by an actual survey of the writer but were secured from different individuals actively working on standardization, the statements of whom the author would consider as authority. Prior to the standardization of rig irons we had 11 manufacturers, each manufacturing five to nine specifications. There were 22 items on each set not interchangeable. Taking seven as the average number of specifications that each manufacturer was making will give us over 1600 possible combinations of parts that should have been interchangeable. We today still have 11 manufacturers. A. P. I. specifications set up we should have 11 manufacturers making only three specifications of irons with all parts interchangeable.

Much the same condition existed in tool joints. There were eight manufacturers, each making about 11 sizes of tool joints. At least four of these manufacturers made two different tapers in each size. There were probably over 100 different joints being made in the United States, some of them, of course, almost identical with others, but not being manufactured from templets that had been checked in such a way that you were sure of getting joints that would screw together. The A. P. I. specifications carry 11 sizes, of which six are largely used. The grand master templet is in the Bureau of Standards at Washington, and every master A. P. I. templet in the possession of a manufacturer has been checked by the Bureau of Standards and certified as to being identical with it.

The adoption of the A. P. I. boiler would establish the use of A. S. M. E. Code boilers all over the United States by oil operators, and would give us standard fittings for this boiler. Take the matter of hand hole plates alone. Prior to the A. P. I. specifications there were, to the writer's knowledge, 10 hand hole plate sizes in existence, while the A. P. I. standards carry but one size.

Working Barrels

A number of years ago the writer spent considerable time investigating working barrels. He found that no two manufacturers were making barrels to the same specifications. Not only were the collars, threads and tapers of two barrels not the same, but there seemed to be no real agreement as to the inside diameter of the barrels. In fact it is the writer's opinion that some of the manufacturers did not have a definite tolerance set-up to which they manufactured.

The writer is familiar with the products of 11 manufacturers of sucker rods in the United States. Prior to the existence of the A. P. I. standards there was no real assurance that any of these joints would screw together, and many of them were special designs that were intended not to screw up at all with other rods.

On pipe, one of the most important commodities bought for the oil field (at least the one in which the most money is invested), there was in existence at least four times as many different specifications, when weight, taper, thread and couplings are taken into consideration. In other words, from the standpoint of variety, it has been simplified at least 75 per cent. At the same time the A. P. I. standards give assurance of one manufacturer's pipe making up with another.

One would think that a movement possessing so many advantages would find ready acceptance by the oil industry. However, without being pessimistic as to the final outcome, for the writer does believe that eventually these standards will all be adopted, the movement is not making the progress that might be hoped. One manufacturer of rig irons during a six months' period of this year sold only about 17 per cent of his total sales A. P. I. irons. In reality the writer is of the opinion that a number of the rig iron manufacturers are not as yet manufacturing 100 per cent A. P. I. irons. A survey by Mr. O'Connor, of the Marland Refining Company, a few months ago with reference to the extent to which A. P. I. pipe is being used indicated that by far the greater percentage of companies are buying little or no A. P. I. pipe. Only recently our company attempted to purchase an A. P. I. boiler and not a single vendor had one in mid-continent stocks to offer.

Now these are only just a few instances, but they indicate that the statement that A. P. I. specifications are not finding the acceptance they should is true. We should get behind the program as a unit. If we find any specification impractical the Institute should have our constructive criticism on the point in mind. We should all work to make the savings possible that the complete adoption of A. P. I. standard specifications will mean.

Slush Consistency Is Important In Rotary Drilling

Slow penetration of softer formations tends to better wall the hole and to prevent cavings and loss of returns

By L. J. BLACK

THE constant increasing depth to which wells have to be drilled, together with the increased cost and the percentage of holes lost in the drilling of oil wells by the rotary process, should be carefully studied to determine drilling speeds, pump pressures, and volume of slush, together with the condition of slush, and certain well defined rules should be worked out to eliminate a great deal of the present trouble encountered in drilling and properly finishing wells.

Science has already demonstrated conclusively that unless the slush is kept reasonably free from sand, the plastic or walling effect of the slush is not up to a standard that can be maintained by keeping the sand content low.

It has been suggested that in order to be absolutely certain of the condition of the slush, samples should be taken at regular intervals, and settled, so as to get a determination of the amount of sand that was being carried in the circulating fluid. In making a test of 100 samples of fluid or slush from as many different wells in the Gulf Coast, we found that the slush weighed all the way from 7½ pounds or a trifle lighter than water, to 10½ pounds per gallon.

The method used to determine the amount of sand in suspension, was as follows: We filled a quart fruit jar half full of slush taken from the flow line at the pump; to this we added sufficient clear water to fill the fruit jar, stirring the mixture thoroughly, sealing it, and allowing it to settle. The sand being the heaviest, would form in the bottom of the jar. The clays would form immediately on the sand, while the balance of the jar was filled with clear water. In this way we are able to determine, by scale measurements on the jar, the approximate amount of sand contained in each sample. We found all the way from 10 per cent to as high as 54 per cent. Very few samples were found that actually came below 7 per cent. We also found by discussing with the drillers on the rigs, that where the sand content was above 10 to 12 per cent, they were having unusual wear on the packing and valves in the pump. Where it came below 10 per cent the wear was not so severe and that slush below 5 per cent sand, really became a lubricant, showing no particular wear on any part of the pump.

Air in Slush

Two reasons were suggested for some of the slush being lighter than clear water. One is trapped air and the other trapped gas, which caused the slush to form somewhat of a suds or foam, and while the volume being pumped was large, the actual weight was below the normal weight of clear water. In making a check to determine if it was from air or gas we came to the conclusion that both air and gas, or either of them, would have this effect, the gas, of course, more readily absorbing itself into the slush than the air, but that leaks in the suction line might be sufficient to aerate the slush with air and at the same time the pump continue to operate. Again, running the foot valve of the pump too close to the top of the slush would cause the air to pull down through the top in the form of an eddy, thus entering at the foot valve and mixing with the slush.

Volume pumped must be sufficient to raise the cuttings loosened by the bit from the bottom of the hole but should not be excessive enough to cause a rise in the hole that would tend to set up a cutting effect on the walls of the well. It is well known to operators that you can go to limit on volume and pressure in the clays or gumbos, as they are commonly known in the Coast Country. These clays or gumbos produce very little sand and the slush can be usually run considerably thinner, or clear water can be added, that would not be safe in the caving or shale formations in the Mid-Continent fields.

It is well known that drilling of sand or rock formations, because of the slower progress made, requires less pump pressure and volume than the gumbos or clays. Drilling of the shales should be governed entirely by the sand content mixed into these shales. Some of them are very hard, some of them drill soft. It is at this point, together with the water sands, that drilling should be carefully watched to prevent future trouble.

When the drilling bit is entering sand stratas there is a natural absorption of water or slush. The sands being a natural filter, the heavier particles of the slush are filtered out and form a wall in the strata, while the water itself, because of the column pressure, will find its way back into the sands. This usually causes a shrinkage or what is commonly known as the losing of circulation, and the losses are frequently made up by the addition of clear water into the slush pit.

Careful study of the situation would seem to indicate that it would be better when this slush begins to disappear, to have a reserve pit of slush that had already been thoroughly settled, the top of which could be drained into the slush pit for use in this sand. This, of course, is done by many experienced drillers, but we have seen a number of cases where it is not done, no provision being made to take care of the reserve mud when excess was being made. When entering soft formations and passing through with a drill bit, is the time to thoroughly mud this strata. Therefore, the softer the strata the more time and pains should be taken to see that it is properly walled.

We know that the disposition of the average driller, is to make hole, when entering a soft strata. The expression is often used "If we don't make hole then, we are likely not to make the payroll in the hard stratas," and it is not our contention that drilling should be slowed down to any appreciable extent, but that preparations should be made so that proper slush could be put to the soft stratas as soon as it is entered; that the volume should be reduced to that point, so as not to set up a cutting effect and enlarge the hole to any great extent beyond the diameter that the bit would naturally cut. Thirty minutes more, properly preparing in entering or drilling through a soft strata might mean the prevention of a caving condition at a later date. Again as this sand or soft formation is usually below a hard formation; this condition, we think, often occurs. The caving of the soft formation enlarges the hole to a point where the support of the hard formation above, is lost. The pressure breaks down this hard formation and it falls into the cave, around the drill stem in the form of boulders, frequently sticking the drill stem, and you are unable to move it up or down, yet at the same time you have a perfect circulation of slush through this boulder formation. At other times the drill stem is broken off, and when you go in with the fishing tool to recover that which is lost in the hole you find that the top of it lays over until it is impossible to either go over it or enter the stem; consequently, you are unable to get hold of and recover it from the well.

Then, to properly drill a well, it seems that three principles should be thoroughly studied, first, the determination of the plastic condition of the slush being pumped; second, the speed or time that should be used in drilling through a soft or sand formation, after knowing the condition of the slush; third, the volume that can be safely pumped when the bit is penetrating a soft formation without the effects of enlarging the hole beyond a reasonable point, by the cutting action of the slush, instead of the actual cutting action of the bit. We feel that if a scientific study is made of these problems that much good can be accomplished, and certainly no harm can be done.

Southern Withdrawing as West Texas Crude Buyer

Pan-American subsidiary buyer of crude for refinery near New Orleans restricts purchases to insure facilities for handling own production

By H. H. KING
Staff Representative

SAN ANGELO, Texas—Action taken several weeks ago by the Southern Crude Oil Purchasing Company, subsidiary of the Pan-American Petroleum & Transport Company, in breaking off all outside crude connections in the West Texas District not protected by contracts, has deprived a number of producers in Winkler, Crane and Upton Counties of a market for their production. Southern has been the second largest purchaser of crude in the West Texas district, with gathering lines connecting fields in the above counties to tank car racks at McCamey and Wickett, and has been running oil from the Crane-Upton district since the latter part of 1926.

Southern's departure from the West Texas crude market as a buyer of outside oil leaves the district with only one major outlet for the oil being produced by companies without private lines, although a number of small crude purchasing agencies are taking a limited amount of oil from one or more fields. Humble Oil & Refining Company has been buying the major portion of the oil produced in West Texas since the development of the first big field at Big Lake, and during October purchased and produced approximately 90,000 barrels daily, while the Southern Crude Oil Purchasing Company purchased approximately 26,000 barrels daily during the same period. Oil being handled by the Gulf Pipe Line Company is confined to that produced by Gulf Production Company, while Magnolia's new trunk line is almost loaded to capacity with oil being produced by Magnolia Petroleum Company and the 10,000 barrels daily to be handled on common carrier basis for Atlantic Oil Producing Company. Illinois Pipe Line Company is restricting its crude buying activities to the Yates field, while other West Texas crude purchasers such as American Petroleum Company, Col-Tex Refining Company, Simms Oil Company are limiting their buying to single fields.

Pan-American sent Southern into West Texas to supply low gravity crude for the 30,000 barrels daily capacity skimming and asphalt plant of the Mexican Petroleum Corporation of Louisiana, which is also a subsidiary company, at Destrehan, Louisiana. This crude was to replace the declining supply of Smackover heavy, and also Mexican crudes, which had been greatly reduced in production because of the efforts of the Mexican government to confiscate freehold titles to oil lands and substitute 50-year concessions. Mexican Petroleum Company, which is a subsidiary of Pan-American in Mexico, with vast holdings in the Tampico district, checked its Mexican operations in protest to the action taken by the Mexican government, and it was this move that left the Destrehan plant without a normal crude supply.

Buys Production

Upon entering the West Texas district as a crude buyer late last year, Southern Crude Oil Purchasing Company announced that its daily requirements would exceed 50,000 barrels, and new connections were solicited in Crane and Upton Counties on this basis. The Southern Pipe Line Company, transportation subsidiary, established gathering lines in the latter two counties, and also built a six-inch line from the Hendricks field, Winkler County, to a tank car rack at Wickett to handle the entire output of the latter field. Southern loaded its Crane-Upton system to capacity with outside purchases and that handled for the Dixie Oil Company, an associated company, after contracting to take a maximum of 10,000 barrels daily from the joint properties of Tidal Oil Company, Thurman & Maxwell, in the Church & Fields area, for a period of one year. This contract does not expire until next February. Southern acquired the discovery well of the Hendricks field from R. A. Westbrook et al in November, 1926, and later bought a half interest in the remainder of the Westbrook acreage.

In acquiring the half interest in the Westbrook acreage, Southern agreed to drill four free wells as part payment, and also contracted to market all oil produced from said acreage. The first pair of the four free wells have been completed for more than two months, and continue to flow approximately 6000 barrels daily on a combined gauge. The other two free tests are scheduled for early completion, and compulsory offset drilling has required the starting of more than a dozen additional tests, with considerable more drilling a certainty. In addition to this drilling, Southern has a large campaign under way in the field on the original acreage purchased outright from Westbrook et al. In the event this new drilling furnishes wells on an average of those completed, Southern will be severely taxed to fulfill its contract with the Westbrook interests, and take care of its other properties in the Hendricks field. Tank cars are the only means of transportation Southern has in sight for marketing this oil, although a preliminary survey was made last summer for a direct trunk line to the Coast, with tentative plans to use combination eight and ten-inch pipe.

Selling Oil

In recent months Southern Crude Oil Purchasing Company has been offering any part of its West Texas crude supply to Louisiana and Texas refining plants, because of the Destrehan plant of the Mexican Petroleum Company not being in need of the full amount, and sales have been made to the New Orleans Refining Company, Inc., at Norco, Louisiana, and to the Chalmette Petroleum Corporation at Chalmette, Louisiana. A freight rate of 24 cents per 100 pounds applies to the crude moving from Wickett to the Gulf Coast plants, and the posted price of the oil, which averaged 30 gravity, is 60 cents per barrel at the well. The Destrehan plant is undergoing extensive expansion of daily capacity at this time.

A new angle to Southern's change in attitude towards West Texas crudes is seen in the recent decision won by the Mexican Petroleum Company, which was granted a writ by the Mexican Supreme Court, holding the Mexican petroleum law unconstitutional. According to reports, the Mexican Petroleum Company will receive drilling permits to resume active operations on all lands acquired prior to 1917, if the Mexican government accepts the stand taken by its supreme court. This would automatically permit this company to again deliver its Mexican oils to the Destrehan plant via its own pipe line and tanker facilities, and cancel the needs for West Texas oils.

Start Four-Inch Line to Hendricks Field

Fort Worth, Texas.—The Ocean Oil and Pipe Line Company has awarded contract for the immediate construction of a four-inch line from the Hendricks field, West Texas district, to the Texas & Pacific railroad, near Wickett, a distance of about 18 miles. This concern maintains headquarters in the Petroleum Building, Fort Worth, and plans to sell the oil handled to Louisiana refineries. Tankage has been erected on the Maxwell and Turman interests' producing lease to take care of one partially completed well until the line is put in operation and connections with other leases have been promised.

Seminole District Output Holding Above 430,000 Barrels

Light shots of nitro in declining wells responsible for halt of decline despite lessened drilling throughout section

By WALLACE DAVIS
Staff Representative

TULSA.—Well shooting at Earlsboro and Bowlegs continued to hold Seminole area production above the 430,000 barrel mark at the opening of this week, and proof of what can be done in the way of bringing old wells back in these two fields places operators at a loss as to what the near future holds in the way of a turn in the output. On only one day during the past week did the total of the five pools show a loss, the daily run for Saturday dropping from 436,859 to 429,437 barrels.

Production for Sunday and Monday is listed by fields as follows:

Field—	Sunday	Monday	Wells
Earlsboro	176,206	178,679	275
Bowlegs	127,580	125,468	283
Seminole City	58,831	59,324	321
Searight	26,203	25,955	68
Little River	41,045	41,095	75
Totals	429,865	430,521	1,022

Reports from the field Monday morning show the increase of 656 barrels plus several thousand barrels loss in natural decline in old wells to have resulted chiefly from increases in Magnolia Petroleum Company's Homsley 3 and 5 at Earlsboro after being shot. The shooting of these two wells increased production on the Homsley lease from 2748 to 9900 barrels in a single day. Other factors leading to the increase are Prairie Oil & Gas Company's Stidham 9, in the northeast of the northwest of the northeast of section 11-9-5, Earlsboro, which increased over the week-end following a 10-quart shot from 2200 barrels to 4900 barrels, and the completion of Barnsdall Oil Company's Sango 3, in the southwest of the northwest of section 1-9-5, which flowed 4090 barrels after finding the Wilcox sand at 4361-70 feet Saturday morning.

The freakish nature of Wilcox production at Earlsboro is indicated by the example of the Prairie's Stidham 9, which offsets a dry hole, Independent Oil & Gas Company's Gaines 3, it failing at 4503 feet. Another example of this freakishness is brought out by the fact that one of Independent's best Seminole area producers and also one of the most phenomenal producers in the area is on this Gaines lease, Gaines 2 having reached a peak of more than 10,000 barrels, and flowing near this rate daily for several weeks.

Light Shots

Carter Oil Company's Johnson 1, in section 3-9-6, Searight field, offers a fair example of what the light shots are doing to run the total production up. This well, after shooting with 10 quarts during the past week, increased from 685 to 1350 barrels.

Seminole area wells are shot with an average of about 10 quarts, this being sufficient to loosen the Wilcox sand in nearly every case. Efforts are made in most cases to shoot the hole just above the sand horizon so as not to rupture the hole badly.

At the Monday morning gauge there were no new wells added for the past 24 hours, and completions from now on through the remaining part of the year are due to come much slower than for the past month. At the opening of this week there were only 194 wells drilling in the five fields. This represents a decline of 19 operations during the past week, and this decline for two weeks ago was 35, and amounted to 25 the week before, totaling a decline of 79 operations in the Seminole district within three weeks. Monday there were only 19 rigs up for drilling, eight locations staked, and 19 wells were shut down, running the total number of operations in the area to 204. Twelve of the drilling wells were above 2000 feet, 25 were between 2000 and 3100 feet, 16 between 3100 and 3700 feet and 124 were drilling below 3700 feet. According to the average completion time after reaching the standardized depth, these 124 wells should be completed within the coming four weeks. This, with an average of eight new locations each week, would mean only 32 operations to replace the 124 completed wells, and Seminole locations have averaged only about this number for the past month, considering the five pools alone, and not exploration work in the surrounding territory.

Snowden & McSweeney's Tiger 1, in the northwest corner of section 13-7-6, approximately one mile south of Little River production, which had a good showing of oil early last week in the top of the Simpson at 4264 feet, was scheduled to begin drilling in early this week after several days shut down. Indications were good for a new pool to be opened at this point, and The Texas Pipe Line Company was running a line to the location for connections.

Completions at Seminole during the past week fell off considerably in number, and furthermore were small generally. Gypsy Oil Company's Cudjo 4, in the southwest of the northeast of section 4-9-6, Searight, flowed 120 barrels of oil and considerable water November 23, while drilling at 4455 feet in the Hunton lime, which was topped at 4415 feet. Sinclair's Jones 7, in the northeast of the southeast of section 9-8-6, Bowlegs, swabbed 90 barrels on the same day from 4208-12 feet. Pure Oil Campany's Strothers D-7, in the southeast of the southwest of section 11-8-6, topped the Viola at 4343 feet and was showing considerable water while drilling at 4370 feet. The Texas Company's Fleet 1, in the northeast of the northwest of the southwest of section 4-9-5, Searight field, found a tight sand at 4105-35 feet and swabbed only 30 barrels on November 26. Magnolia's Rhoads 2, in the southwest of the northwest of the southeast of section 12-8-6, Bowlegs, swabbed 206 barrels from Wilcox at 4219-28 feet November 25.

Grant County Gassers

John Lathrop et al's Henn 1, in the southeast of the northeast of section 35-28-3w, Grant County, and about three and one-half miles north of the Deer Creek field, topped the chat at 4060 feet, and made 500,000 cubic feet of gas. After

OKLAHOMA-KANSAS

	November 16						November 9					
	Lcn.	Rigs	Drlg.	S. D.	Comp	Total	Lcn.	Rigs	Drlg.	S.D.	Comp.	Total
Ponca City District.												
Tonkawa	1	1	2	2	2	8	1	..	4	2	..	7
Outside	8	6	42	19	3	78	8	7	36	21	2	74
Osage District:												
Burbank	6	4	14	5	1	30	..	10	8	5	2	25
Outside	9	8	22	5	1	45	9	5	19	5	3	41
Other Districts:												
Enid	4	3	35	19	1	62	5	2	32	20	3	62
Cushing	6	4	32	6	3	51	8	6	31	6	3	54
Tulsa-Okmulgee	7	32	62	18	12	131	7	29	67	16	13	132
Shawnee-Seminole	16	24	251	21	30	342	15	16	287	24	47	389
Muskogee	..	8	28	24	13	73	..	8	33	22	7	70
Lawton-Duncan	4	7	48	15	11	85	5	5	47	19	9	85
Ardmore	2	14	71	13	5	105	3	15	68	12	9	107
Totals Oklahom	63	111	607	147	82	1010	61	103	632	152	98	1046
Kansas	28	53	104	67	42	294	29	46	124	65	10	274

deepening to 4090 feet the flow increased to more than 7,000,000 feet with a 1500-pound rock pressure. Plans were to shut the well in for future arrangements for handling the gas. Marland & Wagoner's Frantz 1, in the northeast of the southeast of section 35, and an offset to the Lathrop well, topped the chat at 4060 feet, and while still drilling Monday at 4068 feet was making 1,500,000 cubic feet of gas.

George Parker's No. 1, in the northeast corner of section 22-25-7e, Osage County, was reported Monday of this week as having a good showing of 41 gravity oil at 90 F. in the Burgess sand topped at 2660 feet and penetrated three feet. The Texas Pipe Line Company was running line to connect with the well.

The Logan County development offered interest early this week with shows at comparatively shallow depths, compared to the Roxana's McCully 1 producers. Roxana's Freelove 1, in the southeast of the southwest of section 17-19-4w, had a strong gas showing of gas at 4588-91 feet. It was drilling ahead for the Wilcox, which was discovered at 5985 feet in the McCully well. Healdton Oil & Gas Company's wildcat in section 29-18-4w, had a showing of oil at 2790-2828 feet, but also was being drilled ahead toward the Wilcox. The Hall 1, being drilled by Harris & Haun for Welsh, Acton & Brown in the northeast of the southeast of section 11-18-4w, Monday morning was making a head of about six barrels every hour. Two 500-barrel steel tanks were nearing completion for a test of the well, which found the production in the Layton sand at 4768 feet.

Independent & Darby's Le Clair 1, in the southwest of the northwest of the northeast of section 23-7-4, in the Maud area of Pottawatomie County, was reported Monday as good for 1000 barrels from the Hunton lime at 3782-3932 feet. Sinclair Pipe Line Company was running a line to connect.

Operations in Oklahoma continue to decrease, chiefly as a result of the rapid decline of field activity in the Seminole area. In Kansas field activity continues to increase, resulting mainly from new exploration work and development work around the Lamont and Oxford townsites.

The accompanying table shows operations in the two states by districts.

Oxford Stepping Out of Small Producer Class

Oxford, Kan.—The comparatively new Stalnaker sand field in Oxford townsite is gradually stepping out of the small producer class with a peak late last week of 9325 barrels daily. This output, with the opening of the south extension by Meade Brothers on land owned by the Amerada Petroleum Corporation and Wasson, and the present drilling activity in both this extension and in the old producing area, offers indications of a steady rise in Oxford production.

Meade Brothers have made location for Gassoway 2, an offset to the discovery well to the south of Oxford, and Roxana Petroleum Corporation, leading operator in the district, was nearing the pay in its Rothwell 1, a west offset to Meade Brothers' Gassoway 1. Rothwell 1 was drilling late last week at 1650 feet in shale.

Of the total production in the Oxford townsite pool Roxana at the peak had 5255 barrels from 12 wells. Five other producers have been completed by the Roxana, but five were off at the time. Roxana has seven active operations in the Oxford sector, including Rothwell 1, and last week was granted permit by the city for the drilling of Community 10, which is located in block 84. Community 7 was drilling at 1800 feet in shale late last week, Community 8 was 625 feet in lime and had set 12½-inch casing, Community 9 had set 15½-inch casing at 420 feet in shale, Emrich 4 was 1640 feet in shale and Emrich 5, 6 and 7 were rigging up.

The productive district comprising eastern Sumner and western Cowley Counties, and including the Oxford townsite, Churchill, Slick-Carson, Rainbow Bend and Miller fields had a daily yield of 26,540 barrels late last week.

In the Lamont area of northeastern Greenwood County, Darby Oil Company's Schwab 1, in section 30-22-13, had an initial yield of 300 barrels from sand at 1690-1748 feet after being shot with 220 quarts. This well offsets the Lamont townsite Rogers discovery well. The Empire's Schwab 2, a southwest offset to the Rogers discovery, was making 60 barrels after a 240 quart shot in the Bartlesville sand at approximately the same depth.

Second Logan County Test Nearing Deep Sand

Tulsa—The first offset producer to Roxana Petroleum Corporation's McCully 1, Logan County's 5987-foot Wilcox well, is due to be Roxana's Stephens 1, in the southwest of the southwest of section 29-19-4w, which late last week passed the 5800-foot level, less than 200 feet from the prolific pay that stands out as some of the strongest in the State. Last week the discovery well continued to hold well beyond the 2000-barrel mark, with tools still in the hole.

Roxana's Freelove 1, in the southeast of the southwest of section 17, was drilling at 4575 feet; the Sebronek 1, in the southeast of the northeast of section 30, was at 5221 feet; Ross 1, in the northwest of the northwest of section 29, was at 5397 feet, and Williams 1, in the northwest of the northwest of section 32, was below 5100 feet. The Wentz Oil Corporation's Williams 1, in the northeast corner of section 31, was fishing early in the week at around 5200 feet.

Roxana was rigging up its McDaniel 1, located in the northeast of the southwest of section 16-18-4w, a location offsetting on the west the Fox Wood gasser, which was completed in June by the Marland. This well, in the Lovell area, to the south and slightly east of Roxana's McCully 1 oiler, is serving to prove the strength of this vicinity for gas, at this time still holding to 11,000,000 cubic feet of gas and around 50 barrels of high gravity oil, pinched in. The rock pressure is around 900 pounds, and the well has never been drilled in, the pay having been topped at 3995 feet. Eight-inch casing was set at that time at 3956 feet, but the well was not drilled in. Gas from this producer has been supplying drilling wells in the Lovell area since its production started.

I. B. Humphreys to Direct Humphreys Corporation

Houston.—I. B. Humphreys, who succeeded his father, Colonel A. E. Humphreys, as president of the Humphreys Corporation, has taken active charge and control of the affairs of that organization; and since the death of Colonel Humphreys has spent the greater part of his time at the offices of the company at Houston.

P. C. Murphy, general manager of Humphreys Brothers, Inc., located at Brownwood, Texas, has moved to Houston and has become assistant to the president in the management and conduct of the Humphreys Corporation's business.

This corporation is planning to make a vigorous campaign in the way of acquiring acreage, drilling wells and securing production. It owns valuable properties in Logan County, Oklahoma, in West Texas, and in various other fields, including Barbers Hill, Blue Ridge, and Hardin County, in the Texas Gulf Coast region.

At a meeting of the board of directors of the Humphreys Corporation held shortly after the death of Colonel A. E. Humphreys, the following officers were elected: I. B. Humphreys, president; A. E. Humphreys, Jr., Frank Cox, F. Julius Fohs, and J. A. Elkins, vice presidents; and A. E. Humphreys, Jr., secretary and treasurer. The following men were elected directors: I. B. Humphreys, A. E. Humphreys, Jr., Frank Cox, F. Julius Fohs, C. F. Clay, Frank Boyd and J. A. Elkins.

The firm of Vinson, Elkins, Sweeton and Weems was retained as general counsel for the company.

The Trinity Royalties Company, which is owned and controlled largely by the Humphreys interests, has employed A. G. Tackaberry as manager; and at a meeting of the board of directors of his company a short time ago, the following officers were elected: A. E. Humphreys, Jr., president; I. B. Humphreys and F. Julius Fohs, vice presidents, and I. B. Humphreys, secretary and treasurer.

New Mexico Well

Tulsa—Getty's Hinkle 1 well, located in section 23-20s-29e, Eddy County, New Mexico, flowed a small amount of heavy oil from sand encountered at 1370 feet, November 16. Production is coming through 10-inch casing.

The Texas Company's Rhodes 1, in section 22-26s-37e, Lea County, flowed 120 barrels through the gas trap November 13.

California Stocks Drop Million Barrels in October

Probability that no great amount of oil will go to storage during next few months unless critical areas are over-produced

By BRAD MILLS
Staff Representative

LOS ANGELES. — Total stocks of crude and all products in the Pacific Coast territory were almost 1,000,000 barrels less on November 1 than at the beginning of October, according to the latest figures released by the Pacific Coast office of the American Petroleum Institute. The failure of seasonal conditions to affect withdrawals is particularly significant, since it is possible that storage during the spring months will not show a material increase. The over-development of the critical areas may completely change the complexion of the situation, however.

Stocks of refinable crude, 20 degrees A. P. I. and lighter, showed the greatest decrease, having dropped from 23,025,000 to 21,841,000 barrels during October. The great inroad into the light oil stocks is reflected somewhat by the increase in gasoline stocks, which gained 355,000 barrels during the month. There was a decrease of 321,000 barrels in total naphtha distillates stocks, practically offsetting the increase in gasoline. Stocks of heavy crude, 20 degrees A. P. I. and heavier, plus all grades of fuel oil increased 203,000 barrels. There was practically no change in miscellaneous stocks. It is interesting to note the divergence in the curves of light and heavy crudes over a period of one year. Heavy crude and fuel stocks have increased from 88,588,000 to 93,593,000 barrels during the year, while light oil stocks have decreased from 30,323,000 to 21,841,000 barrels during the same period. Total California stocks have decreased from 144,986,000 to 140,046,000 barrels during the past 12 months.

Long Beach

Several new reasons for the extensive drilling campaign now being waged in the Long Beach field have been advanced; and all appear to have some significance. It has developed that most of the small townlot leases call for immediate drilling when they are being offset. For this reason, the beginning of one well often means the drilling of two more, etc. The landowners apparently have zealously guarded their rights, the result being the drilling and deepening of upward of 100 wells.

Another reason advanced, and the one often regarded as the chief cause of the great development program, is that the operators have found that production may be greatly increased by drilling deep enough to set an additional string of casing around 5100 feet. It was the custom in the first wells to cement a water string at 3100 feet. By doing so it was possible to perforate the oil string for practically 2000 feet. This extreme perforation worked fairly well but seemed to allow the oil to drift into other levels. It was discovered that a second string gave much better results with much less perforation. It is only natural that the latest approved fashion will be followed, even if overproduction is the penalty.

With all the recent large completions in the lower sand producing consistently, production in the field continues well above 100,000 barrels. The total output is now more than 15,000 barrels more than a month ago, and almost exactly the same as two years ago. Many deep wells are nearing completion and all are expected to be good producers. Only a short time will be required to deepen some of the old wells, while those started from the surface will not reach their objective until early spring.

The California Eastern Oil Company's Masser 1 is attracting much attention, due to its location. The well is located on the extreme southeastern flank of the field and completely outside the producing limit of the upper zone. The test is now drilling below 6400 feet and more than 1200 feet of oil sand has been cut. The successful completion of this well would mean that the deep sand in the field may be considerably more extensive than the prolific upper strata. It is at least one contour line farther outside the field than the Campbell well, which recently was completed as a good producer below 6000 feet.

Some disappointment accompanies the completion of the Superior Oil Company's Crew 2A, which produced only 800 barrels from 6130 feet. The well is located near the center of the field and mechanical troubles may have had some effect on the action of the producer. The oil sand was satisfactory and of sufficient thickness to warrant a much better well.

Seal Beach

Production in the Seal Beach field showed practically no decline during the week, although new production was negligible. It seems that the Alamitos Heights area, where the Wasem sand recently sent production up to 50,000 barrels, has enough reserve strength to produce fairly consistently from the present number of wells for many weeks. Its action has been a surprise and the future decline will be much slower than operators predicted a month ago. The Associated Oil Company is deepening Bryant 10 to the Selover sand. The well is located in the main part of the field, which is completely held by the Associated, Standard and Marlin. According to the agreement between the three companies, both the Marland and Standard, are entitled to deepen one well each to balance the action of the Associated. Bryant 10 was originally completed near 4400 feet in the Bixby zone.

Rincon

The Pan-American Petroleum Company has been unable to solve the water problem in State 1, the discovery well in the new Ricon field. Water was entering the hole in three places, and a plug set to catch the first water did not remedy the situation. The company is making a series of tests but has been unable to determine why the water continued to break in above the first break in the sand. Several new locations have been made during the week and several wells are already drilling ahead. An injunction restraining certain lessees from trespassing on property in getting to their holdings has been issued. A few wells may be held up temporarily by the action. The Chanslor-Canfield Midway Oil Company is still trying to make producers of Hobson 1A and 1B, both of which are on the southeast flank of the structure. It was these wells that largely influenced the Pan-American Petroleum Company to drill the discovery well.

Potrero

Streaks of oil sand continue at regular intervals in the Associated Oil Company's Cypress 1, in the new Potrero field. Several layers of sand were penetrated below 5000 feet, but their commercial possibilities were doubtful. The total depth of the well is now 5350 feet, with a hard brown shale in evidence.

Athens-Rosecrans

Production in the Athens-Rosecrans field increased sharply during the past

week, due to completion by the Barnsdall Oil Company of two exceptional wells in the deeper sands. The latest was O'Dea 7, which came in flowing 1150 barrels from a total depth of 4955 feet. The well was originally completed nearly two years ago at 4665 feet and flowed at the rate of 2400 barrels. It produced nearly $1,000,000 worth of oil in a little more than 20 months. Its usefulness had not ended in the upper sand, but the nature of the field supported the decision that still better production awaited the operators in the Hoge sand, which is only 300 feet deeper than the Maxwell zone. The oil tests 38 gravity and is showing only a slight cut. O'Dea 14, which was completed more than a week ago is still producing close to its initial output of 1600 barrels, with a million and a half cubic feet of gas for good measure. The producer was completed in the Zins sand at 5812 feet and proves the value of the extremely deep zones in the field. The casing pressure is 900 pounds and the tubing pressure more than 200 pounds. Oil from all zones in the field has been very light, some of it having scaled as high as 40 gravity. The wells produce a surplus of gas, which is very rich in gasoline. Several wells are being deepened in various parts of the field.

Santa Fe Springs

The Santa Fe Springs field, which has been exceptionally quiet during the summer, failed to hold to its settled figure during the week and registered a decline of more than 1500 barrels. A survey of the field shows practically the same number of producers as reported a week ago. The field has gradually lost during the year but has not shown such a large decrease for some time. A natural decline and the poor condition of several wells were responsible for the slump.

The Huntington Beach field is temporarily overshadowed by its neighbor —Long Beach—but has managed to yield enough completions to maintain its production of a week ago. After a trio of good completions in the deep sand, several small wells have been finished in the shallower zones. The Cloud Oil Company completed Huntington Townsite 1 as a 200-barrel producer at 3865 feet. It was an intermediate zone well and the best completion of the week. Miller & Van Allen succeeded in putting their No. 1 on production. It was completed at 2110 feet in the tar zone and had an initial production of 100 barrels. Davis-Haynes and Tompkins, by plugging back to 2100 feet in their DHT 1, solved the water problem and completed the well as a 100-barrel producer. The oil is only 13.5 gravity but is comparatively clean for a tar zone well. Kohlbush and Johnson have practically completed their Wold 1, but have not made a complete production test. The well was drilled to 4405 feet and estimates of production run as high as 500 barrels. A preliminary test indicated that the producer would make a flowing well.

Round Mountain

The abandonment by the Grimes Oil Company of its Round Mountain test, section 14-28-28, leaves little doubt as to the probable trend of production in the new field. The Grimes well was located on the northwestern flank of the structure and failed to log a significant showing, although some signs of oil were found. The final depth was 3040 feet. The St. Helens Petroleum Company, which has reached 3200 feet in its test on section 13-28-28, is comparatively close to the Grimes well and has failed to find a sand of importance. Some fair showings were encountered around 2400 feet but they probably came from the sand which produced oil in the discovery well at 2060 feet. The Shell Company's Elbe 6, which was taken over recently from the Elbe Oil Company, is drilling at 3430 feet, with the formation showing streaks of clay and brown shale. The well is only a short distance south of the discovery well and indicates that the field probably will lie east of the first producer. The Associated Oil Company is testing the southeastern flank of the structure and the outcome of its first well will be especially interesting. With the northwest and the southwest flanks practically out of the running, the southeastern test is attracting much attention. The Associated's well is located on section 34-28-29, which is three miles southeast of the discovery well. The eastern part of the structure has not been tested.

With the exception of the Richfield field, drilling operations in the old fields in the eastern part of the Los Angeles basin have dwindled to a comparatively low figure. The deep sand in the Richfield area has been the real incentive for the extensive drilling now being done. The Associated Oil Company recently completed a 650-barrel well on its Kammerer lease. The deep sand is found around 4400 feet. East Coyote, West Coyote and Brea-Olinda are quiet, with a few deep tests to enliven the development. The Shell Company is fishing for cones in its 7100-foot deep test in the Brea-Olinda field. The company also has a difficult fishing job in Puente A2.

Abandon Deep Test

Santa Rosa, Cal.—The Shell Company of California is abandoning its deep test well on section 8-5-7 at 6385 feet. The well had occasional showings but failed to disclose a sand of commercial possibilities. The company feels that the value of the test lies chiefly in the fact that much information was gained by a careful logging of the area. The Shell interests have been attentive to this county for several years but has failed to develop significant production. The area is practically 100 miles north of San Francisco and one of the most northerly possibilities in the State. Another well is being drilled near the abandoned test.

Nominees for Chamber of Mines and Oil Election

Los Angeles.—Ballots for the election of officers and directors of the Chamber of Mines and Oil of California for the forthcoming calendar year are now in the mail. The list of candidates submitted by the nominating committee embraces the following: President, Chester W. Brown; vice presidents, Theodore Martin and R. A. Broomfield; treasurer, H. L. Westbrook; directors, E. L. Doheny, Jr., David S. Ewing, E. B. Gilmore, H. P. Grimm, W. R. Guiberson, Edwin Higgins, J. R. Hoffman, F. R. Kenney, M. E. Lombardi, A. B. Macbeth, A. C. Mattei, John McKeon, A. C. McLaughlin, E. J. Miley, H. L. Payne, R. L. Peeler, P. M. Pike, William Reinhardt, F. C. Ripley, E. M. Smith, R. A. Sperry, F. C. van Deinse, A. L. Weil and Philip Wiseman.

Leasing Near Bakersfield

Bakersfield Cal.—Leasing on all sides of this city has been especially active during the past month. Starting early in the summer, the demand for available acreage near the Pacific Eastern Production Company's Union Avenue gas well reached its height within a few weeks. The failure to successfully complete the well caused a temporary lull. The present revival has been caused by the location of additional tests near Fruitvale, the discovery of a promising oil sand near Edison and the likelihood that oil traps may extend into the valley at almost any point near the Kern River and Kern Front fields. Although the demand for leases is not confined to the extreme eastern fringe of the valley, acreage between the Pacific Eastern well and the Edison district is commanding the most attention. The Pacific Eastern Production Company is considering a location on section 5-30-28, but will not drill another well as long as there is a possibility of the successful completion of the Union Avenue well, which is now drilling ahead at 4550 feet.

Devils Den

Taft, Cal.—Conflicting reports as to the value of the Midway Northern Oil Company's discovery at Devils Den, 70 miles north of this city, have been received, but company officials have stated that the new well actually produced at the rate of more than 200 barrels. Total depth of the hole is 2394 feet. The oil is very heavy. Due to the distance from transportation and the low gravity of the oil, the usual excitement that follows a discovery has not prevailed. The well is located on section 25-25-18, and is the first real commercial producer ever completed in the immediate region. The company has decided to deepen the well.

The Petroleum Rectifying Company of California, builders of "Petreco," the electrical process for the dehydration of crude oil emulsions, has announced the removal of its offices to the Security Title Insurance Building, 530 West Sixth Street, Los Angeles.

Yates Field Proration Plan Change Due First of Year

Under new arrangement pipe line outlet will be apportioned on proven acreage basis and should curtail drilling activity

By H. H. KING
Staff Representative

FORT WORTH, Texas.—Application of a new pipe line proration plan to the Yates field beginning January 1 was tentatively approved by the majority of the lease owners in this prolific oil area in West Texas during a special meeting of operators held here November 25. The proposed new plan is to divide the pipe line outlet now being provided by Humble Pipe Line Company and Illinois Pipe Line Company to the extent of 42,000 barrels daily among the producers according to the total number of acres of proven leases held by each, instead of using the potential crude yield of each lease as a basis of distributing the pipe line capacity. The latter plan has been in effect with satisfactory success since October 2, and is to continue until the close of 1927, as per original agreement.

Curtain Drilling

A sharp curtailment of drilling in the Yates field will follow in the wake of the enforcement of the new proration plan, as every lease owner in the field that abides by the original plan is forced to keep drilling and piling up new potential production to maintain an equitable percentage of the pipe line outlet. The majority of the operators are drilling, or starting more tests than they now have completed and each of these operators are producing slightly less than 10 per cent of the rated output of their respective leases, based on one hour open flow gauges taken on each well monthly.

The Yates field was credited with having a daily potential output of 447,253 barrels from 56 wells on November 15, according to figures made public by the proration committee, and since this date more than a half dozen big wells have been added to the completion list, thereby boosting the estimated potential to about 500,000 barrels daily. The field has about 40 new tests drilling in the recognized proven area, with cellars dug or machines and rigs up for the starting of about 30 more tests, thus doubling the number of producing wells within six weeks. Abandonment of the original proration plan offered the only solution to curb this active drilling, and under the new arrangement the only incentive to drill will be to widen the proven oil producing area on leases lying on the outer rim of the structure.

To Determine Limits

The services of J. Elmer Thomas, consulting geologist of Fort Worth, have been engaged by the Yate field proration committee, according to W. A. Moncrief, vice-president of Marland Oil Company and chairman of the executive committee charged with the enforcement of the proration plans, to work in conjunction with the geologists of the operators involved in determining the limits of the field. The field is now credited with having about 12,000 acres of leases capable of producing oil in commercial quantities, with possibilities of new area being added to the north, west and southwest. The Pecos River serves as an east boundary for the field, except that Gulf has two wells on the Crockett County side that are making more water than oil. The proving of additional acreage for production after the original proven area is fixed by Thomas and Company geologists will afford an increase in pipe line outlet for the operator furnishing the extension.

A monthly salary is to be paid Thomas for his services, as is the case with B. C. Clardy, who was engaged to serve as field secretary for the proration committee at the beginning of the plan. This expense is to be borne by the operators on the basis of their volume of crude put into the pipe lines.

Gulf Production Company, which is one of the large lease owners in the Yates field, did not become a party to the original plan, and will follow the same policy on the new method of dividing pipe line capacity, but will restrict its production in proportion to offset drainage. Gulf has completed and started putting oil in its eight-inch line extending from the field to a 50 car capacity rack on the Orient Railroad, between McCamey and Hurdle, and has contracted to sell 5000 barrels daily to Sinclair Refining Company of Louisiana, using Sinclair's cars.

The Yates field has been developed into one of the largest potential oil producing areas in the country within the past four months and its standing threat to the general crude market situation is fully recognized. The operators in this prolific shallow area are satisfied to confine production to available market outlet rather than to engage in an expensive tank building program. All oil produced in the field has been sold at the posted price to Humble, or Illinois Pipe Line Company. The oil averages 30 gravity, with a high sulphur content, and is not popular with refineries, other than those familiar with Smackover and Mexican heavy oils. The current price is 60 cents per barrel at the well, or the same as that paid for other West Texas oils of a similar grade.

Although the new proration plan is being fostered to relieve the operators from forced development, and is intended to serve as a more equitable basis in distributing the pipe line outlet, it will place the operators with small prolific leases on a lower crude basis. Opposition can be expected to develop against the new plan from the latter group, and in the event a few refuse to co-operate the field is in danger of being put on a wide open basis.

Latest estimates as to the ultimate recovery of oil from the Yates field is now placed at 500,000,000 barrels.

Circuit Court Upholds Texas' "Rule 37"

Houston—The United States Circuit Court of Appeals at New Orleans last week upheld the constitutionality of the Texas Railroad Commission's "Rule 37," which provides that no oil or gas well shall be drilled nearer than 300 feet to any other well.

The decision was handed down in affirmance of a district court ruling against the Oxford Oil Company in its suit for $8,000,000 against the Atlantic Producing Company, in which the Oil and Gas Division of the Railroad Commission was made a co-defendant. The Oxford company claimed that it lost the amount sued for in Texas development as a result of Rule 37.

This rule was adopted by the Railroad Commission November 26, 1919, under and in pursuance of a legislative act "to conserve the oil and gas resources of the State of Texas." The rule, in full, is as follows:

"No well, for oil or gas, shall hereafter be drilled nearer than 300 feet to any other completed or drilling well on the same or adjoining tract or farm; and no well shall be drilled nearer than 150 feet to any property line; provided, that the Commission, in order to prevent waste or to protect vested rights, will grant exceptions permitting drilling within shorter dstances than as above prescribed, upon application filed fully stating the facts, notice thereof having first been given to all adjacent lessees affected thereby. Rule 37 shall not for the present be enforced within the proven oil fields of the Gulf Coast."

Champanolle Completion Starts New Drilling Rush

SHREVEPORT, LA.—Operators throughout this territory are considerably pepped up over the successful completion of Eddie Jones' Crain well, in the newly discovered Champagnolle field, in Union County, Arkansas, which virtually assures this section of another oil producing district. This well is the fourth commercial well to be brought in in this new section, located 12 miles northeast of El Dorado, and about five miles northeast of the El Dorado East field, the discovery well having been drilled by the Ohio Oil Company several months ago. Since that time, the Magnolia Petroleum Company has brought in a diagonal offset to the discovery well, and the Ohio Oil Company has also completed its second well at a small gas producer, after first testing a large flow of oil which was soon drowned out by salt water caused by a collapsed joint of casing.

Eddie Jones' Crain 1, in section 2-17-14, approximately three-quarters of a mile southwest of the Ohio and Magnolia wells in section 1-17-14, was brought in on November 24, flowing at the rate of 15 million feet of gas and 100 barrels of oil through a separator, from 3062 feet, the bottom of the hole in four feet of sand. After flowing for only a short period, the separator blew up, allowing the well to flow wide open. It was allowed to flow in this manner for three hours, during which time it produced at the rate of approximately 2000 barrels of oil and 15 million feet of gas per day. It was later opened 16 hours and flowed, by actual gauge, 1190 barrels of fluid which tested one per cent sand, one per cent water and 22 per cent basic sediment. The oil production is 31.2 gravity. During the first test, when the well was allowed to flow open for three hours, it showed no sign of water, but made a small amount of sand. It is now closed in pending the erection of a larger capacity separator, and additional storage facilities.

Offsets Staked

This well has caused a slight flurry in drilling activity in this section, although its success was practically assured some time ago. Eddie Jones has made locations for three additional wells to be drilled upon the 40 acre lease upon which Crain 1 is located, one in each corner of the property. The Ohio Oil Company has made locations for three wells on their Rick Pumphrey 80 acre lease which adjoins the Jones 40 on the south, two of these being offsets to the Crain property. Drilling has already commenced on Rick Pumphrey 1, an offset to Jones' Crain 1. The location for Rick Pumphrey 3 was made offsetting the southeast corner of the tract which joins the Jones property on the west, in anticipation of a well being drilled upon this land at once.

Operators are now anxiously awaiting the outcome of two additional tests that are being made in this vicinity, one of which is now under way. The Garrett-Modisette Drilling Company's Gregory 1, in section 10-17-14, about one and one-half miles southwest of the Eddie Jones Crain well, is swabbing salt water and a small amount of 19 gravity oil from four feet of sand, at 2765 feet. It is thought that a string of three-inch tubing will be run through which the well can be swabbed and possibly be made to flow. The Ohio Oil Company is preparing to set and cement 6⅝-inch casing in Will Pumphrey 1, located in the southwest corner of the northeast of section 1-17-14, an offset to that company's Crain 1 and the Magnolia Petroleum Company's Carroll 1, both producing wells. This hole has been drilled to a depth of 2994 feet where one foot of sand was encountered that contained a good show of gas, and casing will be set at 2984 feet. The Rovenger Oil Corporation has shut down operations on its McCain 1, in section 4-17-14, approximately two miles west of Eddie Jones' Crain well, after having tested salt water in nine feet of broken sand and shale formation at 3042 feet. The crew is awaiting orders at this depth.

Nevada County

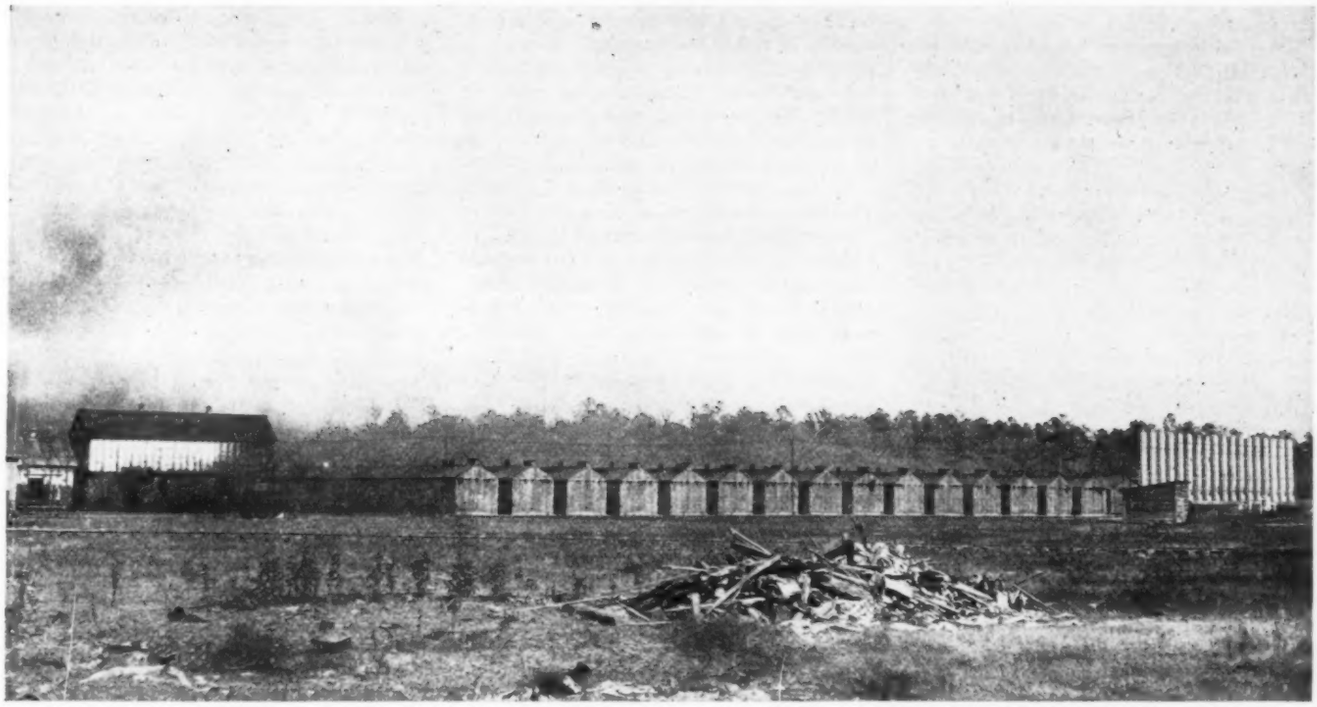
McDonald et al have passed up a favorable showing of oil in their Pell 1 wildcat well, in section 9-15-22, Nevada County, encountered at 2007 to 2010 feet, and are now drilling below this depth without having made a test to ascertain the extent of the showing. A core of three feet of hard, tight sand was taken from the hole at this depth and was found to contain a good show of oil, but no gas. The oil tested about 28 gravity, and covered the ditch while drilling was in progress, although it was not thought that the well could have been completed as a commercial producer even with this favorable showing. This well was tested as dry last week at a depth of 1977 feet, after eight-inch casing had been set at 1996 feet.

The recent discovery that the Pine Island deep producers in Caddo Parish are drawing oil from crevices thought to be above the regular Trinity formation, has had a tendency to somewhat revive the activity of operators in this field, as indicated by the number of permits issued during the week for new wells. The Texas Company, most successful of the companies who have drilled to this depth, has secured permits for two additional wells to be drilled upon its Herndon lease, in section 14-21-15. The last well on this lease was drilled to the 3900 foot level, where it was completed as one of the largest producers to be brought in in the field within recent weeks, and is now flowing a larger amount of oil than any of the deep producers in the field.

The irregular and freakish nature of the Pleasant Hill field, in Sabine Parish, was again proven last week when Moffitt et al tested their Moore 3, located in section 5-9-12, as a small pumper. This is the third well to be drilled on the company's lease in this section, all three wells being located along the north line of the property, and this is the first failure to complete a flowing well. Their two first wells were completed as large producers, leading some to believe that this part of the field would be developed as the most prolific production. The recent failure of the Arkansas Fuel Oil Company to complete two offsets to the Moffitt wells as flowing wells, however, led to the belief that their previous completions were but examples of the freakish nature of the field, which belief has now been strengthened by Moffitt's Moore 3 well showing only 1000 feet of oil when tested at a depth of 3332 feet. L. M. Emlet is preparing to test Bowman Hicks Lumber Company 7, in section 11-7-14, Sabine Parish, at 3529 feet, after having set six-inch casing at 3517 feet.

Considerable interest is being shown in a wildcat location that has been made by the Louisiana Petroleum Corporation et al in section 25-5-1w, Rapides Parish. This well, known as Sam Allen 1, will be drilled in rank wildcat territory where no prior prospecting has been done, and for that reason, is attracting more than usual interest and comment from local operators.

H. M. Roark has abandoned the third of a series of tests that he has drilled in section 19-11-3w, Winn Parish, in the Winnfield Salt Dome area, after having drilled into rock salt at 488 feet, and is said to be making preparations to drill a fourth test, to be drilled with a rotary rig, along the edge of the dome. Rock salt was encountered at a point 40 feet lower in this last well than in the two previous tests, and was only penetrated 22 feet, whereas, in the first two wells, the salt formation was drilled through for a depth of approximatel 400 feet



ONE OF SOUTHERN CARBON COMPANY'S PLANTS NEAR SWARTZ, LOUISIANA. THE ABSORBERS IN THE BACK GROUND ARE THOSE OF THE COLUMBIAN GASOLINE COMPANY, WHICH EXTRACT GASOLINE FROM THE GAS BEFORE BURNING FOR CARBON BLACK

Carbon Black Production Under Conservative Rules

Monroe gas field is source of much of country's carbon black and industry is conducted with due regard to exhaustion of gas supply

By GEORGE REID
Staff Representative

CARBON BLACK has of late years become of importance to the extent that two other great industries are essentially dependent upon its continued production for their functioning. Great quantities of this product are consumed yearly by the automobile and truck tire manufacturers and the dye and ink trades. When consideration is given the many millions of dollars invested in the rubber and printing industries alone, both dependent upon carbon black, the vital importance of this industry is forcibly brought into view.

Approximately 75 per cent of the carbon black production of this country is derived from the justly famous mammoth Monroe gas field in Northern Louisiana. The importance of that statement is further augmented by the fact that since the discovery of the gas reservoir in this section in 1916, the total production of "black" from Monroe gas is estimated at 675,244,834 pounds. During the first half of 1925 there was 64,331,000 cubic feet of gas consumed by the operators of carbon black plants in the Monroe field in the manufacture of 65,848,113 pounds of carbon black—at the rate of 1.084 pounds per thousand cubic feet.

Since the period just mentioned the portion of the industry operating in this largest productive center has through close co-operation with the Conservation Commission of Louisiana, and abiding by the regulatory rulings of that body, held production of natural gas and subsequent production of carbon black on about an even level.

Production of carbon blacy during the last half of 1925 was 64,313,473 pounds—or a little less than the production during the first half of the year. In 1926 production averaged about the same, with a total of 129,564,840 pounds reported. The first half of the current year has seen production maintained at about the same level, and at the end of June, 1927, total production of carbon black in the Monroe field was 60,088,008 pounds—or at the rate of about 10,000,000 pounds per month. Reports covering the later months of this year indicate a continuance of this rate of production, which in terms of daily production means about 335,000 pounds per day.

Conservation

Manufacturers of carbon black in Louisiana have willingly co-operated with State departments of conservation of natural resources for some years, which condition no doubt contributes greatly to the efficacy of Louisiana's conservation laws which now merit the attention of other States confronted with problems of conservation of petroleum and kindred resources.

According to the latest available figures the daily average withdrawal of gas from the entire Monroe field is 370,705,616 cubic feet, which great volume of gas is but 10.64 per cent of the "open flow capacity" of the field. According to the guage of the district the open flow capacity is 3,485,280,692 cubic feet.

The manufacturers of carbon black consume a daily volume of 244,346,000 cubic feet of gas which is 65.92 per cent of the daily average withdrawal

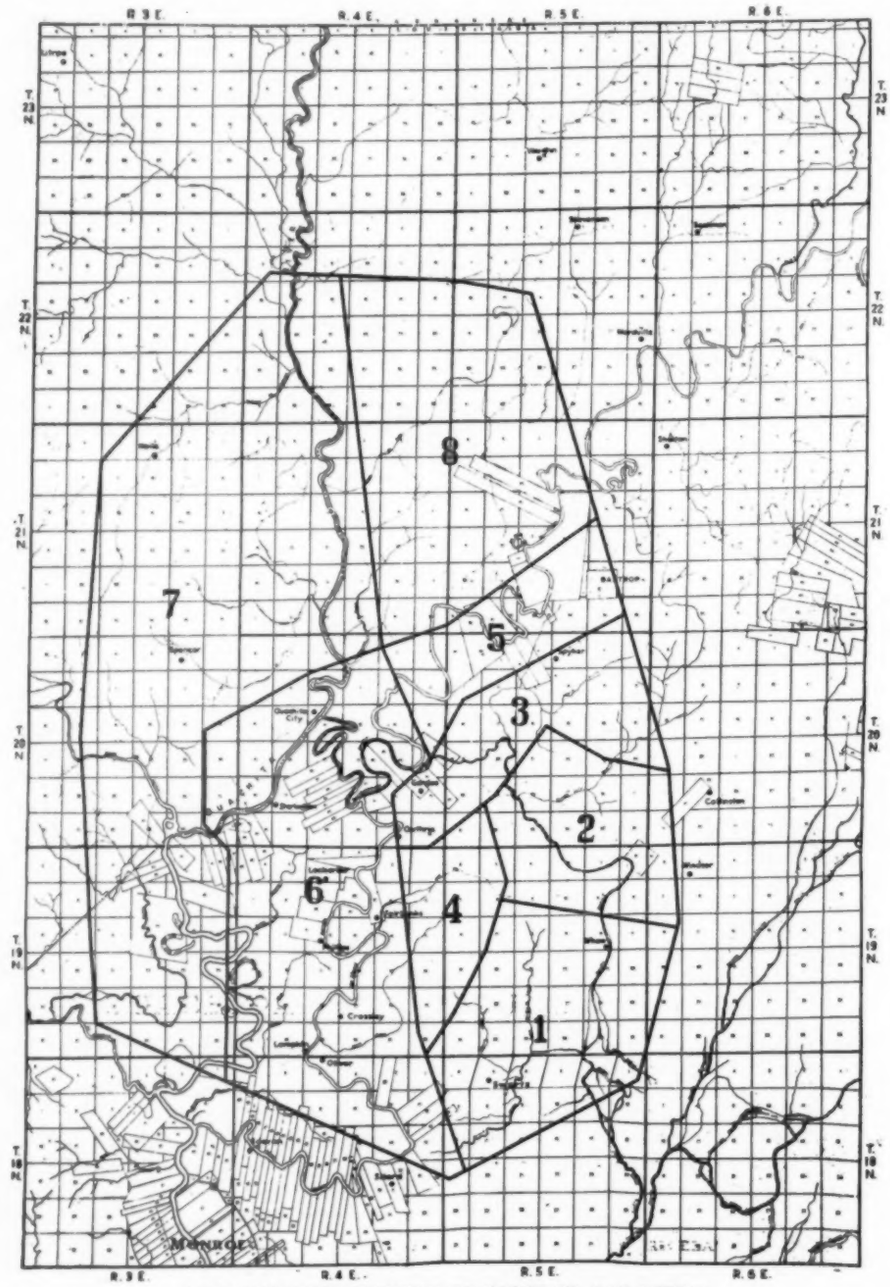
and 7.01 per cent of the open flow capacity of the field.

The daily average consumption for industrial and domestic use is 126,359,616 cubic feet. This is 34.08 per cent of the daily average withdrawal and but 3.63 per cent of the open flow capacity of the field. Thus approximately two-thirds of the gas production is consumed by the carbon black industry, and the reamining one-third transported from the field for domestic and industrial service. The field is located in a section not densely populated, with the nearest big market for industrial and domestic gas being the city of New Orleans. Cheap fuel has attracted some industry to the vicinity, and the recent completion of a gas pipe line to the refinery of the Standard Oil Company of Louisiana at Baton Rouge has materially increased the volume of gas consumed other than in the carbon black plants. The gas line leading south toward New Orleans, is 22-inch, and has been completed to within 18 miles of that city. The completion of this line southward, and a few additional industries in adjacent cities has increased the consumption of gas for domestic and industrial purposes from about 25 million feet daily early in 1926, to the present figure of 126 million cubic feet.

In 1924 the Louisiana legislature passed an act limiting the amount of gas which could be produced from wells drilled prior to June, 1924, to 20 per cent of the open flow capacity. Wells completed after that date were permitted a maximum of 24 per cent of the open flow capacity when one well was bored on each quarter section, 21 per cent is permitted when one well is drilled per 80 acres, 18 per cent for one well per 40 acre tract, 15 per cent when one well is drilled on 20 acres, 12 per cent where one well per 10 acres is drilled, 9 per cent for one well to five acres and but 7 per cent of the open flow capacity from wells drilled on smaller tracts. This act encourages wider spacing of wells.

At the present rate of production the life of the Monroe field is estimated at another 20 years. H. W. Bell in state Bulletin No. 12, has suggested that with a probable consumption of 328 million cubic feet per day during the next 10 years there will follow a period of declining production stretched over 38 years.

Something of the size of this field is shown by the accompanying map. The field is comprised of an area of 347.05 square miles divided into eight zones based upon rock pressure. Original rock pressure for the field was 1025 pounds which has decreased in varying proportions dependent, to a large extent, upon the number of producing wells in each zone. However, for the entire field, rock pressure has decreased from 1025 pounds to 784 pounds, which is a decrease in rock pressure of only 23.5 per cent in the first 11 years of its life. A total of 366 wells were producing at the time of preparation of the map, out of a total of 503 wells drilled. Of this number 95 were productive but closed in. Thirty-four wells were lost, due to cratering in gas sand, deep, and other tests junked, or blown out in san dand water. In the entire areo only eight dry holes had been drilled.



MAP SHOWING EXTENT OF MONROE GAS FIELD

Manufacturing Methods

Carbon black manufacturers have improved their methods of operation and bettered their efficiency during the past few years to the end that they now obtain about twice as much black in present plant practices as was formerly secured. Whereas early reports of the U. S. Geological Survey indicated a yield of a little better than one-half pound per thousand cubic feet, the present yield is maintained around 1.084 pounds from the same volume of gas.

The various companies operating in the field are giving more and more tudy to the technology of the process for the recovery of black and such research has been conducive to better efficiencies and more accurate control of the burning process. Ideal conditions for the deposition of the carbon are now known. These conditions are virtually the opposite from ideal conditions where gas combustion is relied upon for production of heat. It is found that draft, properly controlled and accurately regulated, is essential to efficiency, and while it was once popularly supposed that "the less air the better," it is now recognized that air in proper proportions is essential to production of black carbon. There are many shades of black carbon. Then, there is gray carbon, a hard substance of impaired color which is not classified as "carbon black." It is not generally known that carbon black can be produced in as many various

shades or degrees of blackness as gasoline is white, for example. Texture and fineness are also of importance. Gray carbon occurs when heat is too high—therefore the control of temperature in the burning houses becomes of utmost importance. This being true, one of the most important factors in the manufacture of carbon becomes the weather, and wind. Rain effects the draft, effects the flame and cools the burner houses. Winds blowing across the burner houses in one direction produce a different result from winds blowing down between the long sheds or in the alleys, as they are called.

Operators rely upon their knowledge of flame luminosity for information regarding the condition of the draft and burner house. Thus, in the pat it was generally accepted that the darker the houses were when viewed through the peep holes, the better, while present operation practice calls for flame luminosity visible for coniderable distances from the peep holes.

The process is one of thermal decomposition. The principal constituent of the Monroe gas is methane (CH^4). In the burner houses part of the gas is decomposed into free carbon and hydrogen. A portion is converted into methyl alcohol (CH^3OH) by oxidation. Part of this in turn is broken up into carbon monoxide and water (CO and H^2O) and a portion into formaldehyde, (CH^2O) which becomes oxidized further to become carbon dioxide and water, (CO^2 and H^2O). The methane must be partially oxidized for the creation of heat which aids in the thermal decomposition of the remainder into carbon and hydrogen, and the more accurate the control of this oxidation, then the greater is the production or the deposition of the carbon.

In the matter of draft one chemical engineer with a large producer of carbon black states that he has found that a draft through the burner houses equal to a vacuum of .05 inches of water gives excellent results under general operating conditions. The temperature favored between burner tips is about 550 F. Some difference of opinion exists as to spacing and type of burner tips in the field practices. A carbon dioxide content of the gases just above the flame of 3.5 to 4 per cent is favored by this engineer, as is a hydrogen content of .58 to 1 per cent, oxygen, 15.8 to 16 per cent, and carbon monoxide from .3 to .4 per cent. Recording devices showing the carbon dioxide content of the gases above the burner tips and the amount of draft are used to check the operation frequently.

The channel process remains by far the most important method of producing carbon black in the Monroe area. The channel plants are quite varied in the width, length and arrangement of channels since plant operators differ in their opinions as to what is the ideal arrangement. Width of channels vary from five to ten inches, with a width of seven to eight inches being the most common practice. Revolving cylinders are sometimes used as the collecting area, with other types of equipment in experimental use. During the first part of 1925 there was a total channel footage of 2,560,053, and a channel area of 1,542,268 square feet, in service in the Monroe field.

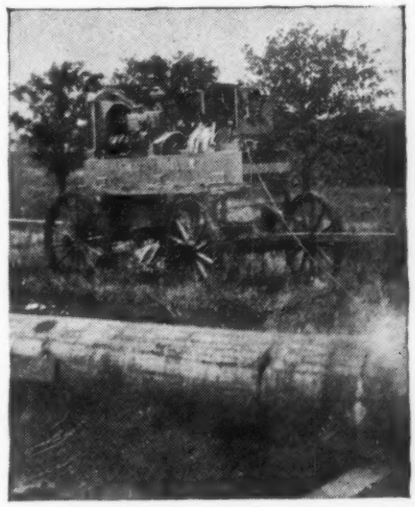
The foregoing discussion indicates that carbon black production is not just a matter of merely burning gas, but that the efficiency of the processes employed is dependent upon many and various influencing factors both mechanical and chemical—for the composition of gas from which "black" is manufactured is an item of much importance. Present research being conducted among the major producing companies indicates that the future will see still further advancing steps and improvements all pointing to higher recovery of black from a given volume of natural gas.

TABLE NO. 1

Metered and Estimated Production (Not Including Wastage) of Monroe Field (10 oz. Above 14.4 lb. Base)

Gas production, metered and estimated (not including wastage) of Monroe field, and Carbon Black production from 1916 to last of first half of year 1927.

Year	Metered Gas Produced M. cu. ft.	Estimated Gas Produced M. cu. ft.	Estimated Per Cent Prod. Over Metered Gas	Estimated Gas Burned Into Carbon Black M. cu. ft.	Carbon Black Produced Pounds	Approximate Extraction Pound 100 cu. ft.
1916	100,000?	100,000?	..	0	0	...
1917	4,500,000?	4,500,000?	..	4,050,000?	2,835,000?	.700?
1918	6,093,000	6,093,000	..	5,650,000	3,960,000?	.700?
1919	20,291,000*	22,300,000	10	21,200,000	14,024,606*	.667
1920	18,100,000*	22,800,000	26	21,000,000	18,565,498*	.885
1921	31,034,000	41,000,000	32	37,700,000	31,003,615*	.823
1922	41,797,000	58,000,000	41	53,400,000	41,966,856*	.786
1923	86,582,000	130,000,000	50	120,000,000	101,398,881*	.845
1924	135,205,000	145,000,000	7	134,000,000	141,675,944	1.055
First half 1925	64,331,000	.64,331,000	0	60,671,000	65,848,113	1.084
Last half 1925	.....	.....	..	.....	64,313,473	....
	.....	.....	..	.....	.....	0.921
1926	.....	.....	..	.....	129,564,840	....
First half 1927	.....	.....	..	.....	60,088,008	....
Total pounds carbon black produced to date					675,244,834	



Lincoln Stable Arc Welding Machine working on gas line.

Electric Welding on Gas Pipe Line in Louisiana

Houston—The first natural gas pipe line ever welded by the electric stable arc process is now being laid between Lamkin and Hodge, Louisiana. The line will carry gas from the Lamkin-Monroe field to the new plant of the Advance Bag and Paper Company at Hodge. This company, the main office of which is in Boston, owns the new gas line, and the large paper and bag manufacturing plant to which it leads is being built by the company at a cost of several million dollars.

The total length of the line will be 45 miles, and 35 miles of it are finished. The Big Three Welding & Equipment Company of Houston, Fort Worth, and Tulsa, is doing the welding.

Five Lincoln Stable Arc gasoline-driven electric welding machines are being used on the job.

Otto Kafka of Houston supplied the seven-inch Seamless Slip Joint pipe used in the line. This pipe is in 40-foot lengths with slip joints.

The welding has been facilitated on account of the slip joints, as they save the customary clamping and tacking. Another advantage which the bell joints are credited with is the expansion and contraction feature. On account of the extra metal on the curves of the joint, the line takes care of its own contraction and expansion.

When the weather is favorable and all five of the machines on the job are in use, about one-half mile of the line is welded per day, five men and a foreman being employed in the work.

The 35 miles of the line which has been completed has been tested with 650 pounds of gas pressure without finding any leaks.

Lamkin is about 75 miles east of Shreveport.

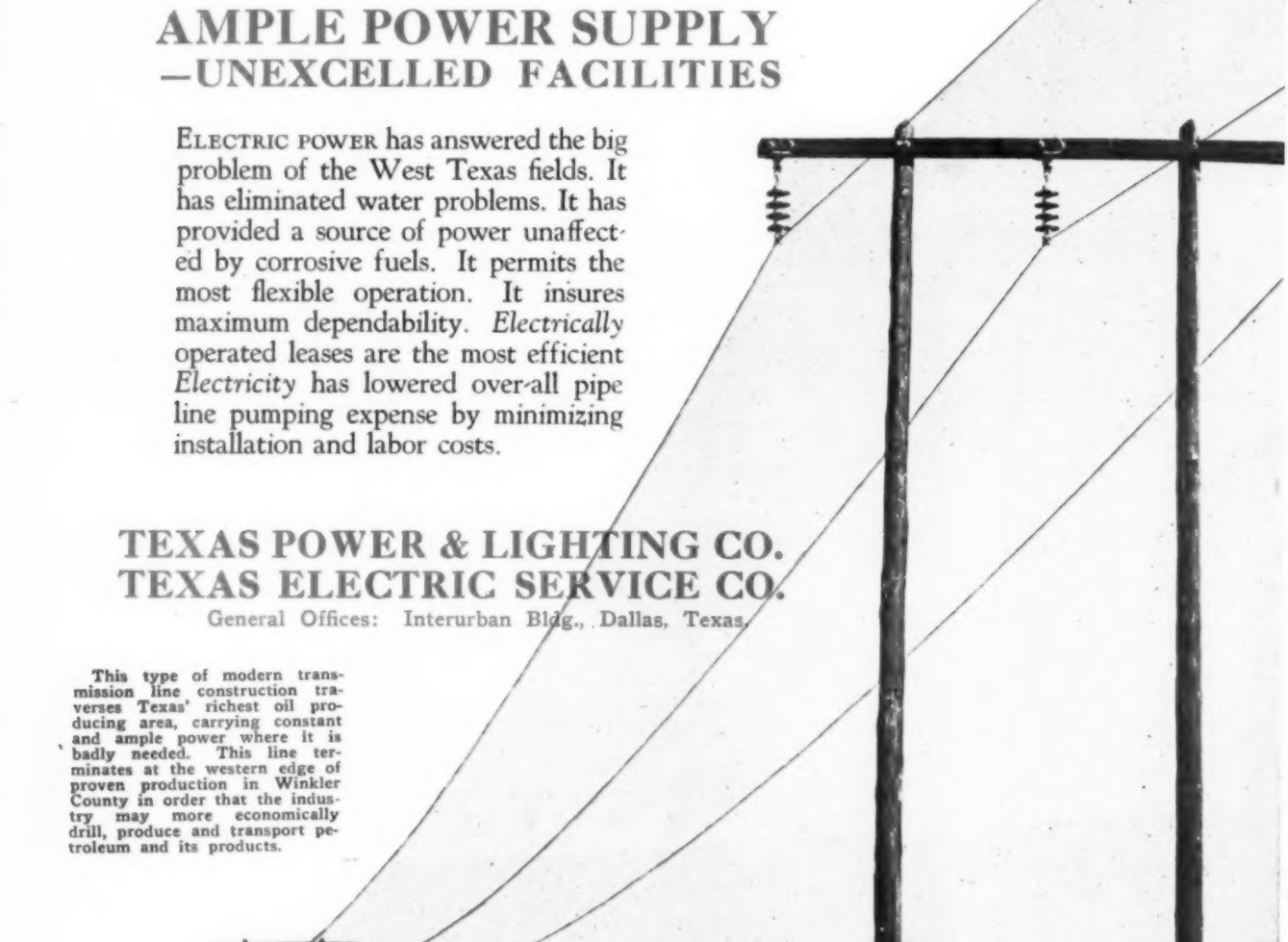
WINKLER COUNTY

AMPLE POWER SUPPLY —UNEXCELLED FACILITIES

ELECTRIC POWER has answered the big problem of the West Texas fields. It has eliminated water problems. It has provided a source of power unaffected by corrosive fuels. It permits the most flexible operation. It insures maximum dependability. *Electrically* operated leases are the most efficient *Electricity* has lowered over-all pipe line pumping expense by minimizing installation and labor costs.

TEXAS POWER & LIGHTING CO.
TEXAS ELECTRIC SERVICE CO.
General Offices: Interurban Bldg., Dallas, Texas.

This type of modern transmission line construction traverses Texas' richest oil producing area, carrying constant and ample power where it is badly needed. This line terminates at the western edge of proven production in Winkler County in order that the industry may more economically drill, produce and transport petroleum and its products.



Say you saw it in The OIL WEEKLY

PERSONAL MENTION-MEN YOU KNOW

C. S. Luce has recently resigned his position as junior chemist with the Bureau of Mines at Bartlesville to go with the Stoll Oil Refining Company at Louisville, Kentucky.

T. B. Slick was a business visitor in Tulsa last week. His old home is in Sharon, Pennsylvania. He has a winter home in San Antonio, Texas, a home and business quarters in Oklahoma City, and his oil headquarters in Tulsa.

Albert Brown will retire as vice-president and general manager of the Oil Well Supply Company of California on December 31, 1927, but will continue with the company as a director and in an advisory capacity. For over 30 years Mr. Brown has devoted his time to serving this company and the Oil Well Supply Company, of which it is a subsidiary.

J. C. McDonald, formerly president of the Standard Oil Company of Kansas, who, accompanied by his wife, recently returned from a trip to Europe, is moving his home from Neodesha to Independence, Kansas. After 38 years in the oil business Mr. McDonald retired several months ago as president of the Standard of Kansas. He has bought the home of Ira C. Wetherill of the National Supply Company, who was recently transferred from Independence to Denver, Colorado.

J. E. Richards of the National Tank Company, returned late last week to his Tulsa headquarters from a two weeks' tour through West Texas fields.

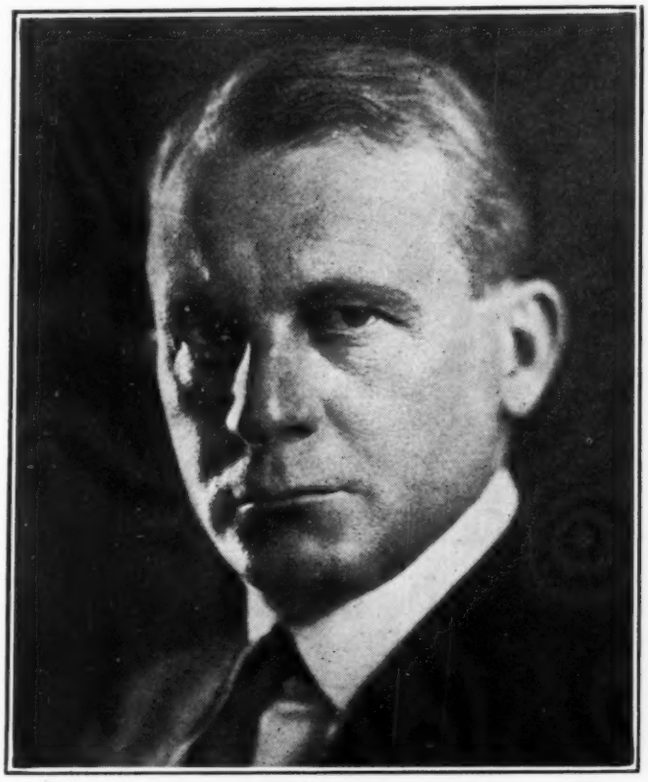
The American Association of Petroleum Geologists has moved its offices from the Tulsa Public Library to the fifth floor of the recently completed Tulsa Club Building.

A. T. Coumbe, assistant economist for the U. S. Bureau of Mines, Washington, has been transferred to the Bartlesville experiment station of the Bureau, and will begin a protracted survey of the uses of oil products in the Mid-Continent territory.

D. A. Green, geologist for Pure Oil Company, formerly located in Tulsa, has recently been made district geologist for the company at Healdton, Oklahoma.

R. L. Smith, identified with the oil supply business for a number of years, died in Houston Monday morning, after a lingering illness. Mr. Smith formerly was with Titusville Iron Works and later with the Beaumont Iron Works Company.

Dr. D. E. Sheppard of Springfield, Missouri, is addressing the Tulsa Geological Society in Tulsa on December 3.



JOHN L. GRAY
of Tulsa, executive vice-president and general manager of the Shaffer Oil and Refining Company, an organization that has expanded rapidly within recent years.

Dr. Charles N. Gould, director of the Oklahoma Geological Survey, was scheduled to speak before the Kansas Geological Society December 3 at Hotel Lassen, Wichita, on the subject of "Correlation of the Permian."

Charles B. Mansville, founder of the Johns-Manville Corporation, died at his home in Pleasantville, N. Y., Saturday night following a stroke of appoplexy a week before. He was 93 years of age. His business of manufacturing asbestos and its by-products, prominently known throughout the world, was begun 69 years ago, and recently was listed as having assets totalling more than $32,000,000. He retired from active business in 1902 to be succeeded by his elder son, Thomas F. Mansville, who, at death two years ago, was in turn succeeded by his brother, H. Edward Mansville.

Bert Dennison of Ponca City, Oklahoma, veteran wildcat operator, who for several years has been outlining a campaign of work in Southern Missouri, is completing plans for a wildcat test near Washburn, in the Ozark Mountains.

Employees of the Houston Oil Company and of its subsidiaries, the Houston Pipe Line Company and the Houston Natural Gas Company, were entertained by those companies Monday night of this week with a "hobo" dance at the End o' Main. All who were present were attired in costumes typical of the dusty knights of the road, and prizes were given for the best costumes. The prize for the ladies was won by Miss Menla Park; it was a hand-out of "hot dogs." The men's prize, a safety razor outfit, was won by O. H. Tomlinson. A reading and several other entertainment features were interspersed among the dances. The companies which gave the dance plan to give others about every six weeks.

John H. Moran, has been made sales manager of the American Tank Company, with headquarters at Oklahoma City. He was formerly a member of the sales department of the International Supply Company.

E. T. Paterson, treasurer and a director of Prairie Oil & Gas Company, headquarters at Independence, died at his home Sunday night, November 27, following a period of illness lasting several months.

Mr. Patterson, 62 years old at death, was among the best known men in the industry, and considered one of the best authorities. He had been with the Prairie for 27 years. A member of the old school of producers and pipeliners.

In his position of treasurer of the Prairie organization for more than a quarter of a century he is accredited with having signed more checks and for greater amounts of money than any other single individual connected with the oil business. One Tulsa operator stated that he has received a check bearing Mr. Patterson's signature every two weeks for the past 25 years.

Funeral services, as planned following his death, were to be held Thursday of this week at Independence, at which time offices of the company were to be closed.

Gas-Lift Increases Production at Santa Fe Springs

Union Oil Company of California is getting 50 per cent more oil from some wells after two years of operation

By BRAD MILLS
Staff Representative

THROUGH the successful application of a simple gas lift system, the Union Oil Company has not only checked the production decline of its leases in the Santa Fe Springs field, but has increased the production fully 50 per cent in a little more than two years of persistent effort.

The achievement is all the more remarkable, in that exactly the same wells that produced the smaller amount of oil are now producing at the increased rate, and after more than two years. One small well has been completed in the interim, but its production is practically negligible. Disregarding that small completion, the old wells are now making more than three barrels, where they made only two before.

Before dealing with the Union's success, a few words concerning the discovery, the remarkable rise and the sudden decline of the Santa Fe Springs field will probably help the reader to understand why it was necessary to seek a remedy for a situation which threatened to make the operation of many leases unprofitable.

The first producing well was drilled by the Union Oil Company in 1919, but as it was located on the flank of the structure and so deep that it failed to attract much attention, it is not generally regarded as the discovery well. Production was less than 200 barrels and even the major operators were skeptical as to the value of such a small production at so great a depth. The oil sand was found around 4500 feet—a depth considered a little impractical in 1919. In November, 1921, the Union Oil Company completed Bell 1 as a 5000-barrel producer. It is sometimes regarded as the real discovery well of the field.

At the height of production, the Union Oil Company alone was responsible for nearly 60,000 barrels a day output. The whole petroleum world was thrown out of balance. There was a concerted effort to shut in some of the production from the field. The Union Oil Company did partially shut in some of its wells. The result was a production of around 45,000 barrels for the company. After the lid was lifted, the Union's wells did not again produce up to the old peak. The intensive drilling campaign had done its damage. The gas pressure was weakening and production tumbled at a furious rate.

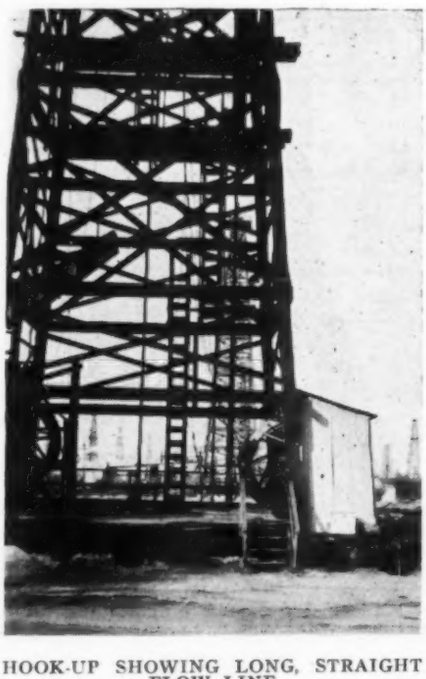
Every operator in the field was in the same boat. They all watched their production decline a little more each month. One by one, the wells ceased flowing, and many were too deep to be pumped economically.

Early in 1925, the Union Oil Company began to experiment with various gas lift installations. Its production had declined from 60,000 barrels to 4700 barrels. Some of the producers that had been the pride of the company were ceasing to flow, and something had to be done. It certainly could not be much worse than it was. There seemed to be a good quantity of gas left in the sand, even though it was insufficient to make the wells flow on their own initiative.

The company had some old compressors of uncertain age and stamina, and they were promptly assembled at Santa Fe Springs for the experiment. They were put to work but were not entirely satisfactory. It was found later that they were far too small and were asked to do more than could possibly be expected of them. However they did more good than harm.

The next step was to move an old steam compressor to the field for further experiments. Soon after it was put to work, results were very satisfactory. The steam compressor could deliver almost 2,000,000 cubic feet of gas, and it was found that if it was not overloaded, it increased production materially.

Bell 12, originally a very good well, was flowing only 150 barrels when the old steam compressor was hooked on early in 1925. Production jumped to 600 barrels almost immediately. The company has experimented with the well until it is now producing 850 barrels. Such results were not to be denied.



HOOK-UP SHOWING LONG, STRAIGHT FLOW LINE

Applied to Three Sands

There are three principal producing sands in the Santa Fe Springs field. The first is found near 3500 feet, the second at 3650 feet and the third at 4250 feet. The lowest sand is comparatively thick, many of the wells having been completed below 4700 feet. Crude from the first sand is 26 gravity, that from the second about 31.5, while the lower sand yields 35 gravity oil.

The Union has applied the gas lift to all three sands and has been successful in almost every instance in each formation.

It was first thought that a high gas pressure and a small quantity of gas would produce the wells best. Laboring under that impression, the company was handicapped in its first experiments. Some wells responded fairly well to the treatment—enough so, at least, that the company did not become discouraged with its first ventures.

After a series of tests, it was found that a moderate pressure and a larger volume of gas flowed the wells more satisfactorily than the opposite. In this way, the flow was more uniform, the fluid level more constant, and the tubing pressure considerably less than when the high pressure was employed.

The gas lift hook-up in the Santa Fe Springs field is one of the simplest on record. While it might not work at all in some regions, it does its work splendidly there. It consists simply of a string of tubing inside the string of casing, which is set on the oil sand. The gas is released in the top of the casing, immediately below the casing head, exerting a downward pressure on and mixing with the oil, forcing it up through the tubing. In many cases two or three wells have been installed on the flow line between the casing head and the trap. It was stated that the tubing pressure is higher in such a case than it otherwise would be. The company is now installing flow lines in as near a straight line as possible. Where it is necessary to make turns in the flow line, it has been found far better to make them as "easy" as possible. By simply bending the flow line gradually or by installing 45 degree ells, this may be accomplished. The slightest addition of friction has resulted in a greatly increased tubing pressure.

Although the simple hookup just de-

The reputation of the Moore Tubular Steel Derrick is built on its strength, its long life, its ease of erection and convenience in handling. For twenty years it has gained the steadily increasing confidence of oil men because its design, together with the proper selection of materials for its fabrication, result in a structure which can be depended upon under all circumstances.

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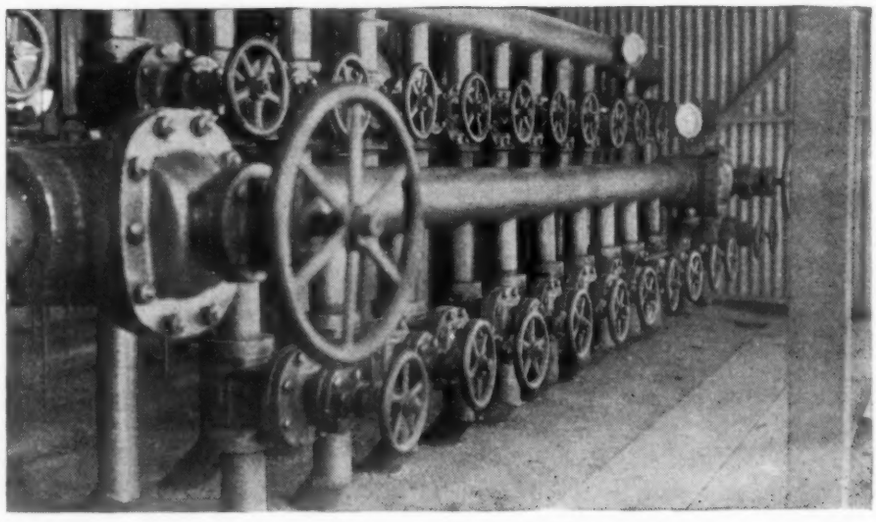
scribed is in general use, it has been found that by allowing the gas to enter the well through the tubing and forcing the out through the casing, some good results have resulted for a short time. Flowing the wells through the casing has been satisfactory only when the wells had been allowed to stand for some time and the fluid level had become very high. The company has always reversed the flow of gas after the fluid level was brought down to the proper point. When the fluid level is very high, it has been found a very difficult matter to start the wells flowing by merely releasing the gas in the top of the casing in the usual way. An enormous pressure is necessary to start it flowing. By reversing the gas flow, as noted above, the trouble is overcome.

Wells have been put on the gas lift system in the various stages of production. Experiments in the field have shown that the best time to place a well on gas lift is just before it stops flowing, or as soon after as possible. There is still a buoyant effect and all the well needs is a little assistance, it has been found. It was also found that wells in a semi-flowing state did not produce satisfactorily on the pump. The frothey, foamy state existing in the well was a distinct handicap.

A careful check is kept on the amount of gas used in flowing each well. A meter is placed on the lead line to the well and one is also installed on the gas line leading from the well. It is rather an expensive process to keep a record in such a way, but the company has found that it is the most satisfactory arrangement. In this way, each well is studied as a separate unit in the system, and by gauging the production against the net gain or less of gas, it has been possible to determine the proper volume and pressure required to obtain the greatest amount of oil.

It has been found that the largest amount of gas does not always produce the greatest amount of oil. In some cases, the reverse is true, however. Each well presents a separate problem and the quantity of gas required varies accordingly. The quantity of gas used in each well varies from 200,000 to 800,000 cubic feet daily, depending upon the individual "pep" displayed.



MANIFOLD HOUSE, UNION OIL COMPANY'S SANTA FE SPRINGS LEASE, CONTROLLING GAS TO MORE THAN A DOZEN WELLS

Pressures

Just as the largest amount of gas does not always produce the most oil, an exceedingly high pressure is not generally effective. The pressures applied in the different wells varies from 80 to 250 pounds. The condition of the well determines the pressure required just as it does the volume.

The rock pressure in each well has much to do with both the volume and pressure required. It has been found that if the rock pressure is much smaller than the pressure required to flow the well, there is the possibility of a loss of gas in the operation. The sand will actually absorb more of the gas than the well can give up. The condition is far from general, however.

The company particularly watches the net oil-gas ratio of the lease, as well as of each producer. In other words, every effort is made to produce each barrel of oil with as little gas as possible—either that put in the well or that naturally coming up with the oil. A barrel of oil can absorb only a certain amount of gas without expansion. Producing an excess of gas with the oil also rapidly depletes the natural gas supply in the sand, making the tendency of the oil to remain in the ground all the greater. As the gas is gradually depleted, each well becomes a more stubborn producer.

The Union has found that by shifting the tubing to different levels in the hole, the most economical point of suspension may be found. By placing the tubing as low as possible, much gas is saved. But by placing it too low, maximum production is impossible, even though a little gas is saved. An extremely low level also requires much more pressure to lift the oil as the fluid level is so far removed from the mouth of the tubing. The best level has been a point where a moderate pressure was required and where the fluid level was high enough from the mouth of the tubing to prevent an easy breaking-through of the gas. Shifting the tubing downward from this ideal position increases the pressure and saves some gas, while raising it reduces the pressure and shows an excess of gas.

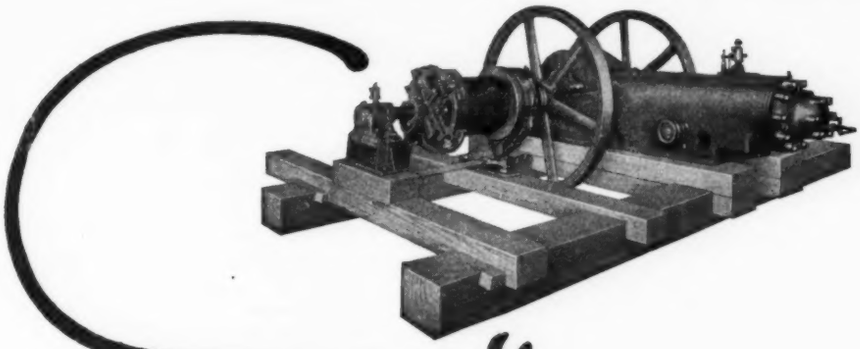
There are now 17 wells on the gas lift system in the field. They require an enormous quantity of gas daily. Yet, the daily gain in gas for the lease is more than 4,000,000 feet. The gas saved from that used through the lead lines, plus the natural production from the wells is very satisfactory.

Free Compression

A very unique and unusual arrangement saves the Union the expense of elaborate compressors and equipment. A large gas company supplying the domestic needs of Los Anegles has built a compressor plant on the Union lease. The gas company purchases the dry gas from the Union's lease, uses all but enough to flow the wells, and then turns back enough for major lease requirements at 275

SIMPLE GAS LIFT HOOK-UP ON A UNION OIL COMPANY WELL

FRANKLIN VALVELESS
OIL AND GAS ENGINES



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Gilbert Jackson

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Gilbert Jackson.

The fuel bill for a Franklin Valveless is actually less than that for a Ford automobile! Lubricating costs are cut to a minimum—many Franklin Valveless Engines have drilled from 10 to 30 wells without costing one cent for repairs. As for water—100 barrels will cool the engine and mix mud for approximately 1000 feet of oil.

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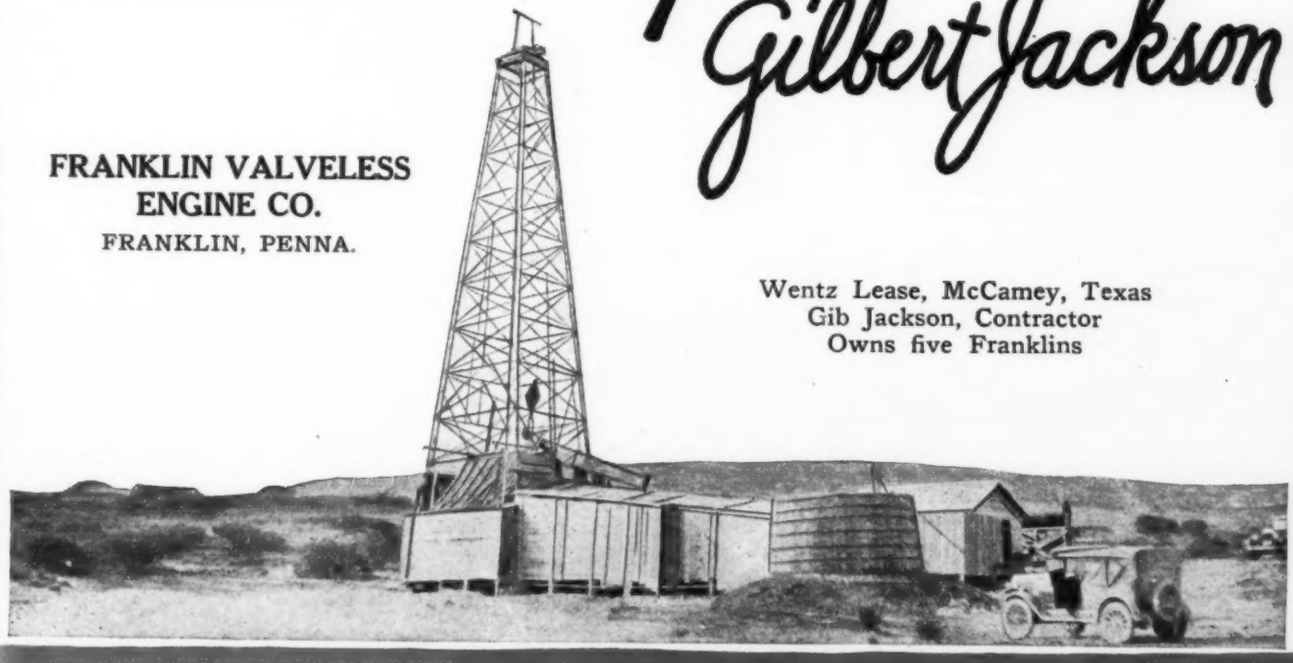

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Gib Jackson, Contractor
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pounds pressure. In this way the Union has a constant line pressure from the gas company's plant in excess of its actual requirements.

In the course of its operations, one two-stage, 16/30x30/9½x24, Worthington steam compressor, which is sufficient for four wells has been installed. It will deliver about 2,000,000 cubic feet daily under ordinary conditions. A battery of six, 80-horsepower boilers has also been installed. The company has found its own equipment useful in many instances, particularly in experimentation. It was the old steam compressor that originally proved the gas lift a practical way to produce oil in the Santa Fe Springs field, and it still has its place.

Practically every well on the lease is controlled through one manifold house. It is possible to flow each well with a different pressure, or a series of wells may be flowed with the same pressure. A small compressor has been installed to build up an enormous pressure, when necessary to start wells or to lower the fluid level. This high pressure may be sent to any well through the elaborate series of valves.

Through the application of the gas lift system in the field, production has been raised from considerably less than 5000 barrels to 7200 barrels, with only half the wells on the system. Practically every well has shown a good increase with the new method, and officials stated that the entire installation as a unit had been entirely satisfactory.

Extension of Yates Field Features Week of Big Wells; Outlet to Raise Hendricks Output

SAN ANGELO, TEXAS.—The shallow lime pay in the Yates field furnished another large quota of big wells during the past week, and the producing area was extended one mile further to the northwest with a flowing well drilled by Kirby Petroleum Company and Edson Petroleum Company on the Tippett 50-acre lease. This new production is without market significance, since the allowed production in the field is limited to the available pipe line facilities furnished by Humble Pipe Line Company, Illinois Pipe Line Company and Gulf Pipe Line Company.

Simms Oil Company's Yates three carried the big production to the north end of the field Monday and also to the center of its 407 acre lease with an output of 12,620 barrels of pipe line oil during the first seven hours after drilling 10 feet of pay to a total depth of 1197 feet. This well flowed at the rate of about 1800 barrels per hour, thus becoming the second largest producer in the field.

The California Company opened one of its completed wells Sunday for 30 minutes, and it gauged about 945 barrels during this brief period.

McMan and Marland's Yates 1 was deepened to 1327 feet, and flowed at the rate of 1125 barrels per hour during a brief gauge of the production.

Gulf Production Company scored its second producer on its Yates lease on the north end of the field, with a flow of 120 barrels of 29.5 gravity oil after drilling 67 feet of pay to a depth of 1325 feet.

Humble's Smith 2 "B," located in the northeast corner of section 101, flowed 160 barrels hourly from pay at 1313 to 1422 feet.

The danger of water encroachment in the Mid-Kansas-Transcontinental's Yates 2 "C," which flowed at the rate of 65,000 barrels daily on a brief gauge recently, was revealed during the past week when Yates 5 on this lease flowed 330 barrels hourly, including 40 per cent sulphur water after drilling about 100 feet into the pay to a total depth of 1130 feet. This well is one location south and west of the big gusher. However, the same interests Yates 1 "E," located one-half mile to the south, is standing with the hole full of oil from 10 feet of pay at 1066 feet, thereby indicating the above producer making water was carried too deep.

Kirby et al's extension well was flowing 30 barrels hourly early this week after drilling 82 feet of pay to a total depth of 1375 feet. McMan is starting a new test on the strength of this well, making location on the 200 acres purchased recently from Pure Oil Company for $1000 per acre, one-half cash and balance in oil.

The Hendricks field, Winkler County, took third position on production in the district during the past week, having averaged above 30,000 barrels daily, and further gains are assured by the completion of new tankage and starting of new lines from the field by Atlantic, Humble, Roxana, Southern and Ocean Oil and Pipe Line Company.

The big wells reported last week as having been added to the Hendricks field are now pinched to about one-half their rated output, but a number of new completions on inside locations were showing for producers early this week, while a slight gain in new field work was also noted. The entrance of Humble into the field with a line is expected to halt the offering of oil by small producers below the posted price of 60 cents per barrel, as Humble will purchase outside oil in addition to taking care of its own production.

Magnolia took an open flow gauge of its deep lime producer on the Dora Roberts farm, located on the Howard-Glasscock County line and west of the Chalk shallow field, and announced a production of 2230 barrels during the first 24 hours ending Tuesday. This well uncovered a new pay horizon at 2956 feet late in October, and production gauge was delayed pending the erection of a tank farm.

Houston Wildcats Hold First Dinner Meeting

Houston.—Speaking on the subject, "What Is the Matter With the Oil Industry," General Jacob F. Wolters, Houston attorney, delivered the principal address Monday night at a banquet sponsored by the recently organized Houston Wildcats.

Diagnosing the problem of overproduction, the foremost question confronting the industry, the speaker declared that the true solution of it lies not in legislative action but in the creation of a greater market, a greater variety of uses for the product. He disparaged the idea of governmental control, pointing out that the great strides that have been made in the past have resulted from the initiative of unhampered individuals and companies; and said that the greatest progress of the future can be accomplished only if there is minimum of regulation by the government. As to co-operative action within the industry itself in the matter of limiting production, General Wolters said that the effectiveness of the method will always be lessened through anti-trust laws and public sentiment against co-operation among large companies.

J. D. Collett of Fort Worth, former president of the Texas division of the Mid-Continent Oil & Gas Association, pointed out the value of the "Wildcat Idea," telling of the spirit of fellowship that wildcat clubs have engendered among oil men of Fort Worth and Dallas.

John S. Bonner, vice-president in charge of sales of the Humble Oil & Refining Company, created general merriment through his representation of a minister of the tribe of Ham delivering a sermon.

The "Greasy Quartette," composed of L. R. McCollum, vice-president of the Emsco Derrick & Equipment Company, Henry Arnold, of the production department of Humble Oil & Refining Company, and J. D. Isaacs and A. R. McTee of the Gulf Publishing Company, sang several songs and were well applauded.

The membership of the Houston Wildcat committee is as follows: John R. Suman, chairman; R. L. Dudley, secretary; T. J. Donoghue, Adrian Moore, R. C. Kuldell, George L. Noble, Jr., Bob Ames, and Joe Russell.

"Committee of Nine" to Meet December 10

Washington, D. C.—Advised that the proposed meeting of the "Committee of Nine," on December 3, would interfere with attendance by the members at the annual meeting of the American Petroleum Institute in Chicago, December 6, Secretary of the Interior Work, as chairman of the Federal Oil Conservation Board, has announced postponement of the initial conference of the committee to December 10.

Safety and Clean-Out Equipment Featured in Gas Field

Cartright, in Live Oak County, supplies large part of supply transported by Houston Pipe Line Company to Houston industries

By JACK LOGAN
Staff Representative

LAREDO, Texas — The Lucas or Cartwright gas field, in Live Oak County, is one of the older pools of Southwest Texas, and is also one of the largest fields furnishing gas for the line of the Houston Pipe Line Company leading into Houston and to the industries along the Houston Ship Channel. Since the Houston Oil Company last week brought in their Cartwright 20 as a good well, there are now 19 producing gas wells in the field.

The Lucas field is owned by the Houston Oil Company, exclusively, and is situated chiefly on the Holman Cartwright ranch, about 25 miles southwest of Beeville. The discovery well was the Cartwright 1, completed in January, 1923. The wells have an initial open flow of about 40,000,000 cubic feet and all wells completed as producers are still producing. The Cartwright 4, one of the oldest wells, is still one of the best producers of the field. Only three tests have been drilled in the field as dry holes.

It was about a year after the completion of the discovery well before a pipe line was completed to the field to handle its production.

Most of the production of the field comes from between 2000 and 2100 feet. Very little oil is associated with the gas, the small amount that is found in some of the wells being coal oil.

No Blow-Outs

L. T. Wade is field superintendent at Lucas for the Houston Oil Company, and has been there since the early development of the field. He has the commendable record of never having let a well get away from him by blowout or fire, and has been very successful in the drilling of wells. Whenever any problem arises in the field he is determined to work out a solution for it, and in the course of his experience at Lucas he has instituted various original methods and devices.

As a safety measure, for instance, Mr. Wade, together with R. L. Lynch, driller, worked out the manifold arrangement shown in the accompanying picture.

The manifold has two purposes: (1) To extinguish fires quickly by the use of mud, and (2) to make it possible to come out of the hole with a dry string.

At "A" in the picture is shown the connection of the manifold with a derrick hose; "B" is a steam line; "C" is a gas line; "D" is a water line, and "E" is a mud line leading to the well. At "F" is a gate by means of which mud can be turned into the standpipe "G," to which is connected the rotary hose, or limited to the manifold. The pipe leading up to "F" and the manifold from below is the one which carries the mud from the mud pumps.

In the ordinary drilling activity the gate valve "F" is open, permitting the circulation of the mud through the rotary hose. By manipulating the various other valves shown in the picture, steam, gas, water or mud may be turned into the derrick hose or the rotary hose, as desired.

If a fire should break out on the derrick floor, for instance, mud could be used as an extinguisher by closing the valve "F" and those in the steam, gas and water lines, and opening the one at "A." This procedure has actually been used, the mud quickly putting out a fire. Mr. Wade says that mud is much more effective than water in fighting a blaze, as it will stick to the wood on which it is directed.

In the same way steam or water may be turned into the hose when desired.

In order to come out of the hole with a dry string, the system of valves are so manipulated as to shoot gas down into the hole, driving the mud down.

Screened Mud

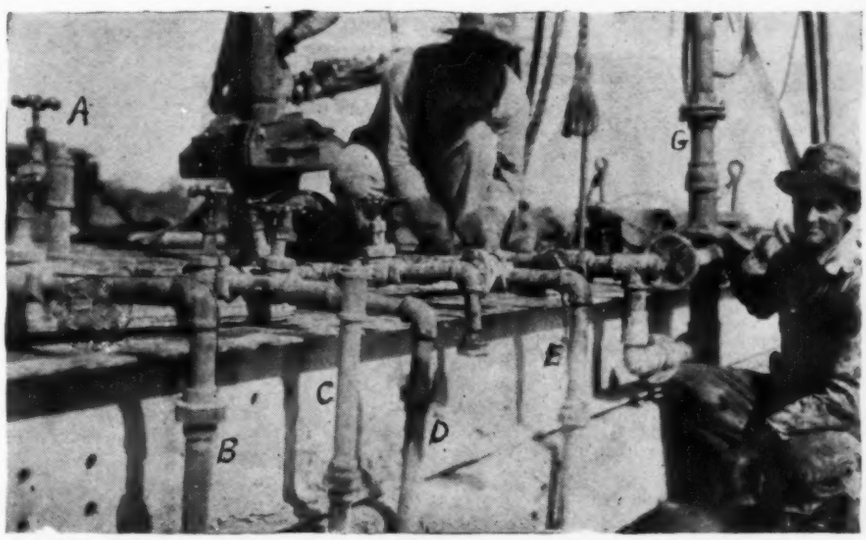
Another practice which Mr. Wade employs in the field and finds to be well worth while is the use of a strainer for the mud used in drilling. Just as the mud comes out of the hole and starts circulating in the slush pit it must flow through a screen which will not allow gravel, shale or other undesirable matter to go through. When the mud reaches the pumps it is free of these damaging elements, and as a result the life of the pumps is increased, and savings are effected by reducing the number of repair jobs on them.

Among the latest innovations made in the field was the introduction of the Regan control and tubing head hook-up on one of the wells, the Sellers 3. This well had quit producing, due to mud in the bottom of the hole sealing off the gas. By means of the Regan equipment gas was used to force the mud out of the hole, blowing it out in such quantity as to spray the surrounding ground and trees. The operation was made by means of gas pressure and two-inch tubing. Gas from a field line was sent into the well alternately through the tubing and through the casing around the tubing after the mud in the well had been thinned with water. This is what is known as "rocking" a well. Eventually the mud and fluid was blown through the tubing, as mentioned above. One of the accompanying pictures shows the mud being blown into the air.

Water now intrudes in the well, but the equipment which was installed for the purpose of blowing out the mud takes care of it. At regular periods the valves on the well are so manipulated as to let the well build up considerable pressure, by means of which all the water in the well is subsequently blown up through the tubing. Only one man is needed for this operation.

In completing the Cartwright 20 recently, the mud was blown from the bottom of the hole to begin with, using Regan

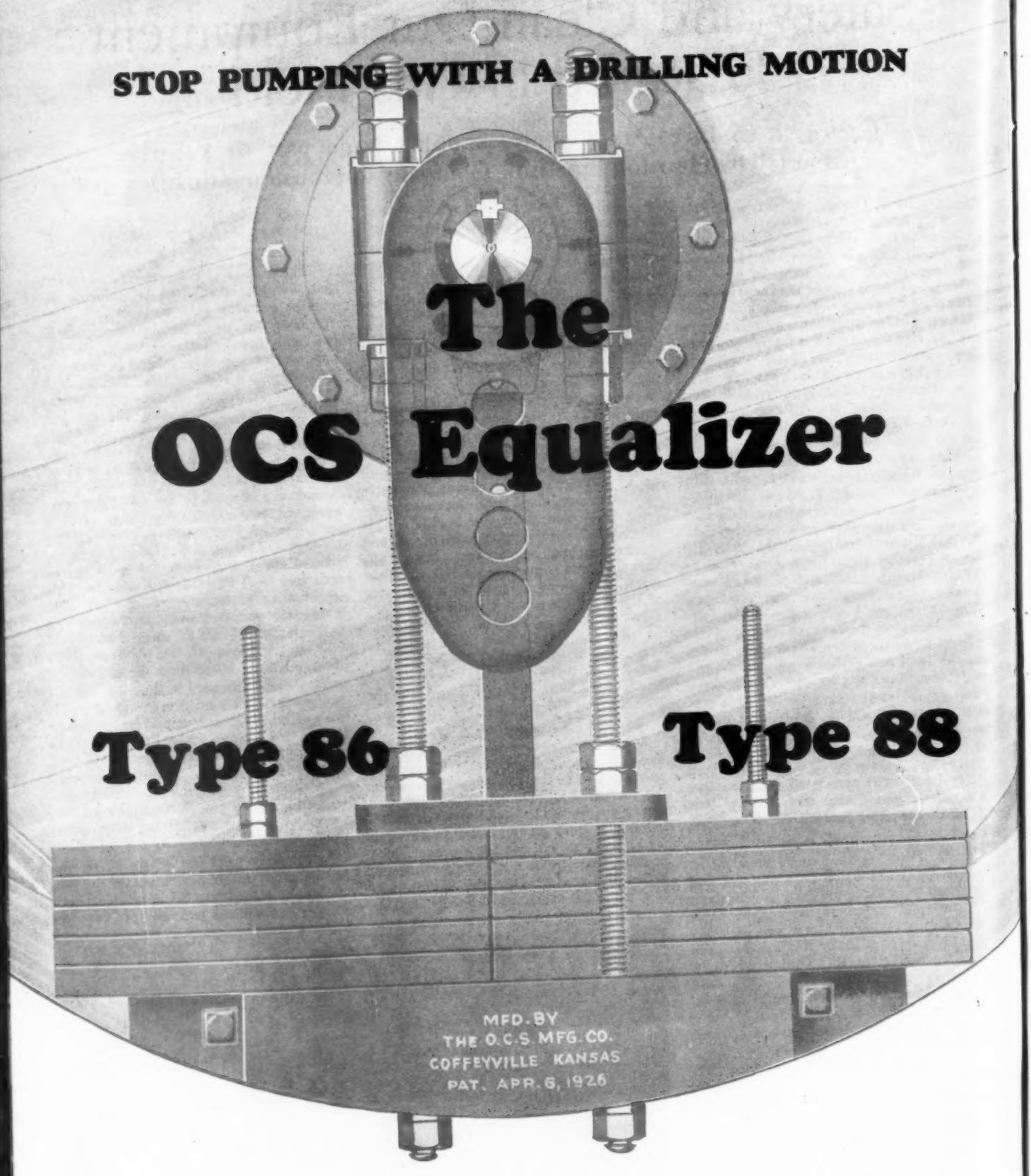
(Continued on page 316)



MANIFOLD USED IN DRILLING OPERATIONS AND AS SAFETY MEASURE IN LUCAS GAS FIELD

STOP PUMPING WITH A DRILLING MOTION

The OCS Equalizer



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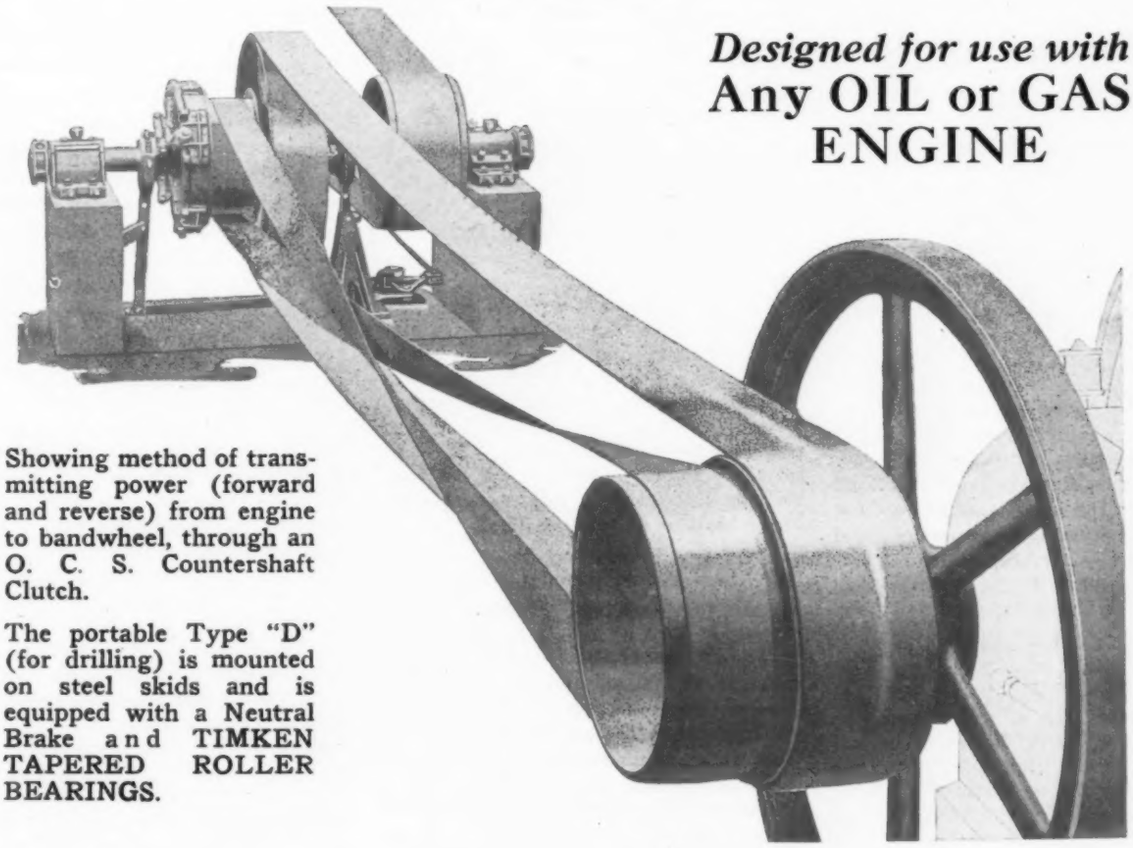


Showing method of transmitting power (forward and reverse) from engine to bandwheel, through an O. C. S. Countershaft Clutch.

The portable Type "D" (for drilling) is mounted on steel skids and is equipped with a Neutral Brake and TIMKEN TAPERED ROLLER BEARINGS.

THE OIL COUNTRY SPECIALTIES MFG. CO.

COFFEYVILLE, KANSAS

Write for Bulletin D-48.

Say you saw it in The OIL WEEKLY

That an industry should have grown from practically its inception to the present proportions of the oil industry within the limits of the life time of one man, seems more than remarkable.

John D. Rockefeller is the most widely known man who has even been associated with oil, and has continued as such years after retirement from any active part in the affairs of any oil company. It was his business genius which directed the formation of the greatest and most effective commercial organization ever known to any branch of industry. He has had his critics, but the fact remains that it is largely due to the efforts of this one man, while the industry was new, that the entire industry was organized to keep pace and ahead of the demands upon it.

Progress of the oil industry has been continuous since it first felt the Rockefeller influence, and at this time which is near the close of the industry's biggest year, we deem it fitting to present this brief review of his career, which should be an inspiration to the younger oil men who did not have part with him in the early days.—The Editor.

JOHN DAVIDSON ROCKEFELLER

JOHN DAVIDSON ROCKEFELLER needs no introduction to the reading public, for his name is known everywhere. He is the man whose constructive genius is responsible for the most effective commercial organization in the world. His achievement is no accident. The foundations of his success were laid in his early youth on a New York State farm and the superstructure was begun in Cleveland, Ohio, before the petroleum industry had been started by Edwin L. Drake. Mr. Rockefeller has been accused of crushing competition ruthlessly by the employment of unfair devices, but the truth of history will record that his most aggressive and able competitors have become his associates and fast personal friends. His wonderful success has been obtained by the application to his business of the science of economical process and the organization of his forces as perfectly as an army, but with discipline never savoring of compulsion. The Standard Oil Company represents at once the highest type of loyalty and the largest degree of individual initiative. Its commercial triumphs have been accomplished by scores of business giants, working each in his own way, but all co-ordinated to a single end—the production of the best possible commodity at the least possible cost.

John D. Rockefeller was born in Richford, Tioga County, New York, on a farm. His parents were William Avery and Eliza Davison Rockefeller, of good American stock, and they early inculcated in him the lessons of the dignity of labor, the value of money and the essential of Christianity. At 9 years of age he showed his business instinct by saving his earnings and investing them at interest. When 14 years of age his parents removed to Cleveland, Ohio, and he entered the high school there. At 15 he joined the Euclid Baptist church and was soon one of the most enthusiastic workers in the congregation. He personally solicited the funds to pay the debt resting on the church. At 16 he left school and sought employment, and after some discouraging experiences he succeeded in obtaining a position as assistant bookkeeper in the forwarding and commission house of Hewitt & Tuttle, at a salary of $4.00 a week. He remained with the firm for several years, his salary advancing to $700 a year when he became cashier and bookkeeper. Before he was 19 years old he had been elected a trustee of the Euclid Avenue Baptist church, and soon thereafter he resolved to embark in a business of his own. With a thousand dollars he had managed to save and another thousand borrowed from his father, he formed a partnership with Maurice B. Clark, as Clark & Rockefeller, and set up in the forwarding and commission business, with which he was familiar. Close application to business brought him success, but it did not prevent him from giving a share of time to the church and charities. Mr. Rockefeller had not reached his majority when the wonderful well of Drake was drilled on Oil Creek and a new industry came into being. The following year, when he was 21, his firm took an interest in a refinery—his start in the business of refining oil.

IN 1865 Mr. Rockefeller sold out his interest in the commission business and, with a partner, Mr. Samuel Andrews, purchased the interest of his associates in the oil refining business. The firm of Rockefeller & Andrews rapidly enlarged its oil manufacturing. Mr. Rockefeller, with rare foresight, saw in the new industry the opportunity of a lifetime and Mr. Andrews was a practical refiner, capable of turning out a better product than was generally on the market. The firm had an excellent field in the lake region and Mr. Rockefeller's business acquaintance and knowledge were equal to its cultivation. As the business expanded William Rockefeller was taken into the partnership and another firm of William Rockefeller & Company was organized. John D. Rockefeller was quick to see that the business was to be largely one of export to foreign lands and soon William Rockefeller was transferred to New York to handle the product at that end, while Mr. Henry Flagler was taken into the firm at Cleveland. In 1870 the business had grown to proportions that demanded further expansion and the Standard Oil Company of Ohio was incorporated, John D. Rockefeller being made president. At about the same time the National Refiners Association was formed and he was chosen as its president. Mr. Rockefeller was then 31 years old; success had attended his efforts, his character was formed, and he bent his remarkable intellectual and physical powers to the task of supplying to the world an artificial light that should give the maximum service at the least possible cost.

IT was plain to Mr. Rockefeller that diffusive effort was not economical, and he counselled a combination of resources to secure greater efficiency. Two years after the organization of the Standard Oil Company of Ohio, or in 1872, nearly the entire refining interest of Cleveland and a large portion of that in New York and the oil producing region were combined in that company when the capital stock was increased to $2,500,000. Its business in one year reached over $25,000,000, the largest company of the kind in the world. In order that there should be no unnecessary expense and to assure a regular supply of crude, the company bought interests in pipe lines, had iron cars built and systematized its transportation and marketing. Mr. Rockefeller, noting the high cost of barrels, arranged for the purchase of timber lands, the erection of sawmills and the addition of barrel works, thereby reducing the cost of packages more than one-third. Other

Some Recent Glimpses of the Oil King on His Pocantico Hills Estate

leading refineries in Ohio, Pennsylvania and New York were impressed by the efficiency of the Standard system and associated themselves with it from time to time. For the better handling of the business in 1882 the Standard Oil Trust was formed with a capital of $70,000,000, which was later increased to $95,000,000. Through all these changes Mr. Rockefeller was the guiding spirit and directing head. His genius challenged the attention of the business world and his well known probity enabled the company to finance its early necessities.

Mr. Rockefeller was married on September 8, 1864, to Miss Laura C. Spellman, a classmate in the Cleveland High School, the daughter of a representative in the State legislature, who was eminently fitted to be his companion and helpmate, as their tastes were much in common, both being devoted to church work and charities. To this union five children have been born: Bessie, who is the wife of Charles A. Strong, associate professor of psychology in Chicago University; Alice, who died early; Alta, who is Mrs. Prentice; Edith, the former wife of Harold F. McCormick of Chicago; and John D. Rockefeller, Jr., a graduate of Brown University, who has his father's business talent and all his love for church and benevolent work. The Rockefeller children have all been reared with good sense and Christian teaching, they dress simply, live without display, and are active in hospital, Sunday School and other good works, towards which their sympathies naturally tend.

Mr. Rockefeller retired from active business about 20 years ago and has devoted much of his time since then to works of benevolence, disbursing from his large fortune with the same acumen and care that he exercised in its accumulation. His benefactions are too many to enumerate, aggregating more than a hundred million dollars, but the chief of them are the Rockefeller Institute for Medical Research in New York, and the Chicago University. He has been a liberal giver to other educational institutions, but these two are his own creations, the Institute wholly so and the University practically so. No restrictions have been placed upon either and the only instructions from the donor of their splendid endowments are that they shall do their utmost to benefit mankind. Mr. Rockefeller has recently endeavored to incorporate the Rockefeller Foundation to administrate his large wealth, but factious opposition has prevented action by congress.

In the petroleum world Mr. Rockefeller has occupied the premier position and has devoted his energies to advancing the interests of his business associates and to give the world good and cheap light. In the business world at large he has discouraged speculation and has used his power to minimize violent and injudicious fluctuations. His success has been due to fidelity to his ideal and the extreme integrity in his dealings. He has been grossly misrepresented, because of his consciousness of probity he has declined to reply to criticism. He has deprecated a defense at the hands of his friends on the ground that the record will show the truth in the final analysis. For the remainder his works speak for themselves. He has been a benefactor to his race on the same principle as he who makes two blades of grass where but one grew before. He has made good artificial light cheap and has given an impulse to general education without precedent.

Mr. Rockefeller has lived a simple life, ostentation and display being distasteful to his very nature. He is devoted to golf as a recreation and spends much time on the links in all weather.

Above—The 88-year-old financier waiting to tee off for his customary nine-holes of golf.

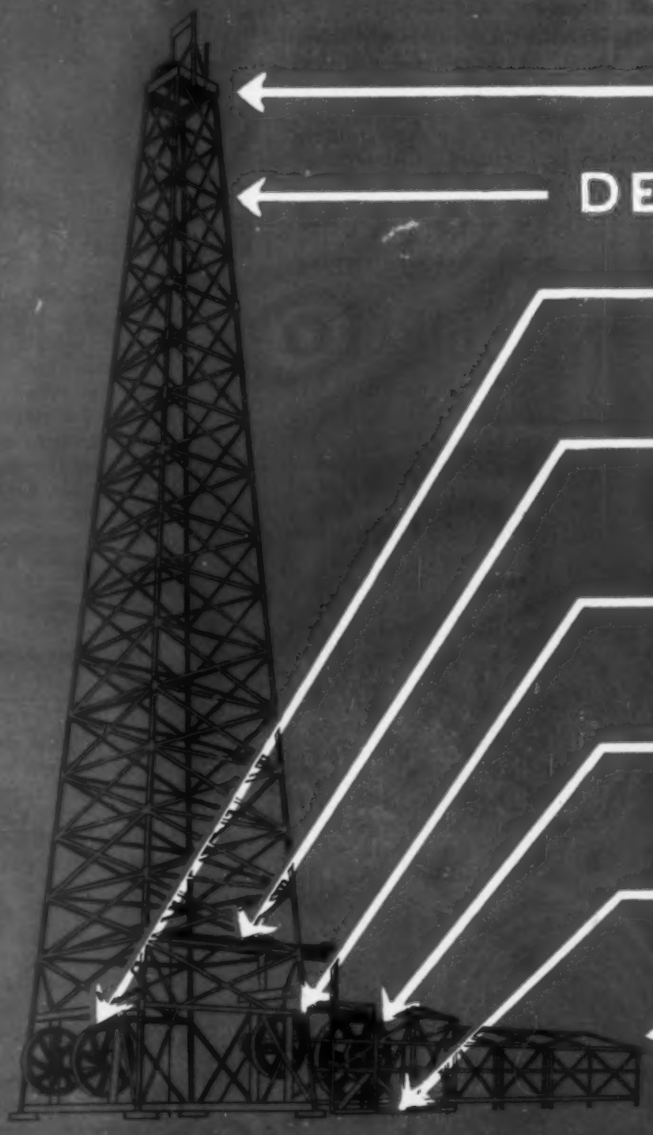
Below — Rockefeller on the green on his private nine-hole course at his Pocantico Hills Estate.

Photographs by Underwood and Underwood

Center—A close-up study of John Davidson Rockefeller 88-year-old founder of the oil industry.

W. Armstrong Price, Houston geologist, is spending much of his time during the winter at Corpus Christi doing consulting work for the Saxet Oil Company. He was in Houston during the week attending the gas men's meeting.

MOORE OIL



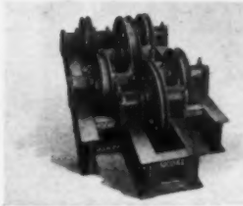
Moore ALL STEEL

LEE C. MOORE & COMPANY, *Inc.*

DALLAS, TEXAS HOUSTON, TEXAS BORGER, TEXAS

WICHITA FALLS, TEXAS CASPER, WYO.

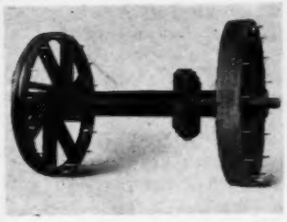
FIELD EQUIPMENT



CROWN BLOCK
Strength, easy running action and long life, with no attention save occasional oiling.

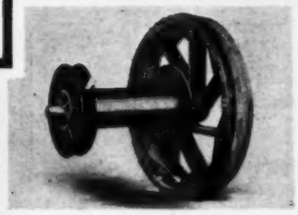
WALKING BEAM
Built for severe service, I beam type, heavily reinforced.

PITMAN
Has a self-aligning bearing with double oil pocket for lubrication.



BULL WHEEL
Heavy shaft, shrunk and riveted on gudgeons.
One piece double V groove tug.

BAND WHEEL
Rugged steel construction. Shipped in one piece ready to mount.



CALF WHEEL
Has an extra heavy steel pipe shaft and channel steel spokes.

MACHINERY SUPPORTS

ENGINE HOUSE

RIG EQUIPMENT

.....PITTSBURGH.....TULSA

SHREVEPORT, LA. EL DORADO, KAN. EL DORADO, ARK.

PARKERSBURG, W. VA.

Index to New and Improved Field Equipment Section

The following concerns have brought out new or improved equipment for use in the producing and pipe line branches of the oil industry during the past year. Descriptions of these new products will be found in the Special Equipment Section which begins following page 98. For easy reference an additional index, according to classification of product will also be found below. (Advertisements in this section have been listed in the regular advertiser's Index on page 53.)

A

Acme Fishing Tool Company, The 118
Alamo Iron Works, The..... 55
Allis-Chalmers Manufacturing Company 71
American Blower Company, The 172-174
American Fomon Company, The..142
American Iron and Machine Works 110
American Seamless Tube Corporation, The 73
American Supply Company 55
American Well and Prospecting Company 58
Paul Arbon and Company 48
Ash Grove Lime and Portland Cement Company 32
Atlas Valve Company, The 29
Axelson Machine Company 180

B

Baash-Ross Tool Company 102
Baird Tool Works, The 72
Baker Casing Shoe Company 30
Barco Manufacturing Company.... 25
Beaumont Iron Works Company..300
Beebe Brothers ..... 2?
Bessemer Gas Engine Company.. 65
Billings and Spencer Company, The 302
Black Hawk Manufacturing Company, ...176
Black, Sivalls and Bryson, Inc. ..302
Braden Steel and Winch Company, The 176
Bradford Motor Works, The 168
Boykin Machinery and Supply Company, Inc. 172
Buckeye Traction Ditcher Company..110

C

Cameron Iron Works 7
J. A. Campbell 94
H. W. Cardwell Company, The..8-12
J. I. Case Threshing Machine Company, The 25
Caterpillar Tractor Company, The 148
Champion Blower and Forge Company 69
C. H. and E. Manufacturing Company, The 150
Chicago Bridge and Iron Works ..181
Chicago Pneumatic Tool Company, The 100
Clark Brothers Company 12
Cleveland Tractor Company, The 160
Columbia Nut and Bolt Company, Inc. 124
Columbian Steel Tank Company, The 299
Columbus McKinnon Chain Company, The 74
Columbus Sucker Rod Company, The 144
Continental Supply Company 144
Cook Paint and Varnish Company, The 122
Fred E. Cooper 8

D

D. and B. Pump and Supply Company 116
Darling Valve and Manufacturing Company, The 30
G. M. Davis Regulator Company, The 168
Delta-Star Electric Company, The 152
DeSoto Foundry and Machine Company, Ltd., The 160
Dodge Manufacturing Corporation, The 168
Duff Manufacturing Company, The 16
Dunn Manufacturing Company, The 73
Duro Engineering Company, The 50-55

E

Ellis Manufacturing Company, The 112
Elliott Core Drilling Company ... 80
Emsco Derrick and Equipment Company, The 33
Evangeline Iron Works, Ltd., The 156

F

Fairbanks, Morse and Company ..154
Federal Supply Company, The....136
Foamite-Childs Corporation 160
Fort Worth Well Machinery and Supply Company, The 62
Frick-Reid Supply Company 14
Fuller Machine and Forge Works 124
Fusion Welding Corporation, The.158

G

Gardner-Denver Company, The... 69
Garlock Packing Company, The.. 80
Gaso Pump and Burner Manufacturing Company 6
General Electric Company 126
General Machine Company 80
Girten Belting and Supply Company, Inc., The 296
Goulds Pumps, Inc. 20
A. J. Graham 150
Graham Brothers 113
Guiberson Corporation, The 88

H

Hercules Tool Company 152
C. W. Herrin 174
Hill Clutch Machine and Foundry Company 168
Charles N. Hough Manufacturing Company 176
Hughes Tool Company, The 17
Hutchison Engineering Works 34

I

Inferno Company, The 112
Ingersoll-Rand Company, The 48
International Derrick and Equipment Company, The 6

J

Jarecki Manufacturing Company..190
Jensen Brothers Manufacturing Company 34

K

Kansas City Hay Press Company, The 160
Kemical Process Company, The..299
Kennedye-Plumb Corporation, The 168
Kerotest Manufacturing Company 162

L

Landis Machine Company 166
Latex Iron and Steel Works 7
Layne and Bowler Company, The 305
LeBus Rotary Tool Works 296
Lincoln Electric Company, The...122
Link-Belt Company, The 104
Lufkin Foundry and Machine Company 185
Lucey Products Corporation..74, 184

M

M. and K. Pump and Specialty Company, Inc. 174
M. and V. Tank Company 32
MacClatchie Manufacturing Company, The 166
Maloney Tank Manufacturing Company, The 16
Marion Machine, Foundry and Supply Company 28
Martin-Loomis Corporation 146
Master Builders Company, The... 73
H. B. May Manufacturing Company 32
J. H. McEvoy and Company 299
Merit Oil Equipment Company, The 73
Metric Metal Works, The 150-152
Miller Combination Bailer and Pump Company 142
Miller Rubber Company, The 46
Moon Manufacturing Company 146

N

National Pigments and Chemical Company 94
National Supply Company 43
National Transit Pump and Machine Company 79
National Turnbuckle Derrick Company 98
Neilan-Schumacher Company, The 92
Neumeyer and Son 302
Novo Engine Company 140
Nye Tool and Machine Works 102

O

Walter O'Bannon Company 100
Ohio Injector Company, The.....184
Oil Well Core Drilling Company, The 293
Oil Well Supply Company 21
Oklahoma Iron Works 190
Oxweld Acetylene Company ..100-102

P

Pacific Gear and Tool Works, The 74
Penn Electric Switch Company .. 98
Peerless Supply Company 16
Philadelphia Gear Works, The ...113
Pickering Governor Company, The 73
Pittsburgh Equitable Meter Company, The 79

Portable Rig Company, Inc., The..181
Portable Vacuum Rig Company, The 84
Pyle-National Company, The 88
Pyrene Manufacturing Company.. 29

R

J. P. Ratigan 124
Regan Forge and Engineering Company 82
Joseph Reid Gas Engine Company, The 302
George P. Reintjes 20
Ren Manufacturing Company 92
Republic Rubber Company, The .. 12
Republic Supply Company 58
Republic Truck Sales Corporation 172
Reschke Machine Works Company 190
Rhode Islands Fittings Company..142
Rhode Island Fittings Company, The 142

S

Selden Truck Corporation 162
Shaffer Specialty Company, The..128
Shaffer Tool Works, The 120
Sheffield Steel Corporation, The.. 20
H. C. Smith Manufacturing Company 128
Smith Monroe Company, The 134
Smith Separator Company, The ..138
Southern Mill and Manufacturing Company, The 305
Spencer Trailer Company 192
Star Drilling Machine Company, The 184
Stearns-Roger Manufacturing Com Company 14
Stitt Ignition Company, The 20
Stockham Pipe and Fittings Company 181
Stover Manufacturing and Engine Company, The 20
Sullivan Machinery Company 126

T

C. J. Tagliabue Manufacturing Company 92
L. O. Tekell 150
Texas Steel Company, The 12-14-82
Tips Engine Works 110
Titusville Iron Works, The 16
Toledo Pipe Threading Machine Company 94
Traction Machine Company, The..181
Trumble Gas Trap Company 128
Truscon Steel Company 8
Tulsa Pump Company, The 192

U

U. S. Machine Shop, The 120
U. S. Tool Company 134
Union Electric Manufacturing Company 102
United Iron Works, Inc. 292
Universal Crane Company 134

V

Volz Engineering and Equipment Company 84

W

W-K-M Company, Inc. 304
Walworth Company, The 185-186
J. D. Wallace and Company, The 113
George D. Watson Company 62
Waukesha Motor Company 136
Weber Engine Company, The ... 72
Webster Engineering Company, The 176
Western Supply Company, The ..308
Westinghouse Electric and Manufacturing Company 108-110
Wheatley Brothers 138
White Company, The 170-172
J. H. Williams and Company 124
Williams Tool Corporation 132
Wilson Oil Tools Corporation 118
Wilson-Snyder Manufacturing Company 132
T. J. Wood 176
Worthington Pump and Machinery Corporation 177-180

Y

Yale and Towne Manufacturing Company 170

Z

Zero Hour Torpedo Company 6

CLASSIFIED DIRECTORY OF NEW AND IMPROVED EQUIPMENT

AIR AND GAS LIFT EQUIPMENT—
J. H. McEvoy & Company 298
Regan Forge and Engineering Company, The 82

AIR AND GAS LIFT CONTROL APPARATUS—
J. H. McEvoy & Company 298
Neilan-Schumacher Company ... 92

AIR SEPARATORS—
Smith Monroe Company, The ..134

ANTI-FRICTION PIPE SLEEVES—
Baasch-Ross Tool Company 102

ANTI-FRICTION TOOL JOINTS—
George D. Watson Company 62

ARCH TILE—
George P. Reintjes Company, The 20

AUTOMATIC PIPE CUTTERS—
Toledo Pipe Threading Machine Company 94

BACKFILLERS—
Buckeye Traction Ditcher Company 110

BACK OFF SOCKETS—
Shaffer Tool Works, The 120

BACK OFF CASING SPEARS—
Shaffer Tool Works, The 120

BACK-UP TONGS—
J. H Williams & Company 124

BAILERS—
J. H. McEvoy & Company 298

BALLS AND SEATS—
Charles N. Hough Manufacturing Company 176

BANDWHEEL POWERS—
Titusville Iron Works, The 16

BEAM HANGERS—
D. & B. Pump & Supply Company 116

BELT GOVERNORS—
Dodge Manufacturing Corporation 168
Link-Belt Company 104

BELT FASTENERS—
Girten Belting & Supply Company, The 296

BELT TIGHTENERS—
Federal Supply Company, The ..135
Fuller Machine & Forge Works 122

BIT BRACE REAMERS—
Nye Tool & Machine Works ...102

BLOW OUT PREVENTERS—
Cameron Iron Works 7
Shaffer Tool Works, The 120

BOILERS—
Frick-Reid Supply Company 14

BOILER ARCH BARS—
Fuller Machine & Forge Works 122

BOILER FEED WATER REGULATORS—
Atlas Valve Company, The 29

BOILER GAS REGULATORS—
Neilan-Schumacher Company ... 92

BOLT CUTTING MACHINES—
Williams Tool Corporation 132

BOLTED TANKS—
Columbian Steel Tank Company, The 299
Maloney Tank Manufacturing Company, The 16

BOMBS—
Zero Hour Torpedo Company, The 6

BONNET VALVES—
Ohio Injector Company, The ..184

BRAKE WHEELS—
Emsco Derrick & Equipment Company 33

BREAK OUT BLOCKS—
American Iron and Machine Works 110

BREATHER TANK ROOFS—
Chicago Bridge & Iron Works..188

BULLDOZERS ON TRACKS—
W-K-M Company, Inc. 304

BULL HOISTS—
International Derrick & Equipment Company 6

C LINKS—
J. P. Ratigan 124

CABLE TOOL COUNTERSHAFTS
Portable Rig Company, Inc., The 181

CALCULATORS—
C. J. Tagliabue Manufacturing Company, The 94

CHAIN DRIVEN SAND REELS—
National Supply Company, The 43

CASING REDUCING HEADS—
J. H. McEvoy & Company 298

CASING SPEARS—
Acme Fishing Tool Company, The 118

CASING TONGS—
Wilson Oil Tools Corporation..118

CATHEADS—
U. S. Machine Shop, The 120

CEMENT ADMIXTURES—
Master Builders Company, The.. 73

CENTRIFUGAL PUMPS—
Titusville Iron Works, The 16
Worthington Pump & Machinery Corporation 177

CHAIN VISES—
Toledo Pipe Threading Machine Company 94

CHECK VALVES—
Neilan-Schumacher Company .. 92

CLEANING OUT ATTACHMENTS
Fred E. Cooper 8

CLEANING OUT AND DRILLING MACHINES—
W-K-M Company, Inc. 304

COMBINATION BAILERS AND SAND PUMPS—
Miller Combination Bailer and Pump Company 42

COMBINATION DRILLING MACHINES—
Star Drilling Machine Company, The 182

(Continued on Page 94)

A "hole" Lot of Difference

The Most Important and Sensational Screen Development Since the Patenting of the Original Layne Keystone Wire Wrapped Screen

On these two pages is illustrated a most important development in oil and water well screen design—one of unusual interest and benefit to the industry.

The Layne Patent Keystone Wire-Wrapped Screen, the most widely and extensively used screen in the world today, has been still further improved by this latest feature,

A much enlarged inlet area without the weakening of the screen.

Our engineers, with their years of practical experience in solving screen problems, thought this idea of the milled grooved holes a good one—leading oil companies have just completed tests that have proven conclusively that the new improved Layne screen gives still greater production, and are most enthusiastic about its performance.

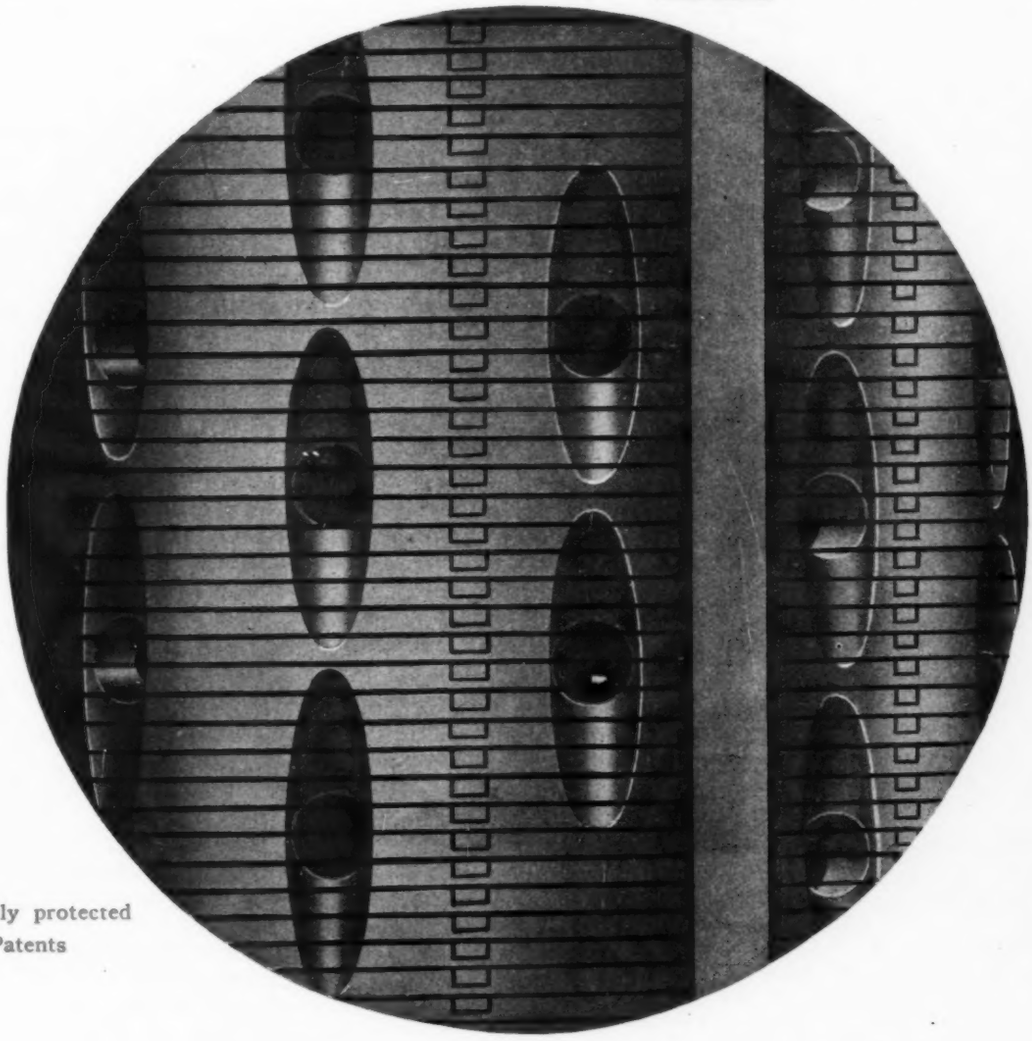
LAYNE and

HOUSTON, TE

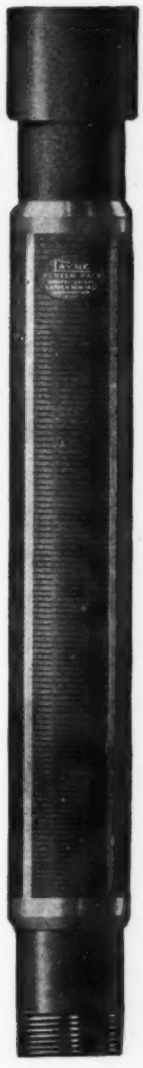
The Layne New York Co., 30 Church St., New York

The Layne & Bowler Cor... Los An...

Makes a Well Do All Its "Stuff"



Design fully protected by Patents



View of Complete Layne Screen

Look at the Difference

Observe the maximum inlet area provided by the oblong grooved holes milled in the pipe. Notice that the fluid now has to flow but a short distance before passing through the screen and that the sloped surface of the hole can receive oil directly through the openings from between ten or twelve wires.

Since ten to twelve wraps of wire pass over each groove, excessive production over the drilled holes is avoided, as a uniform feed of the fluid through the outer openings of the screen is continually fed through the drilled holes from the entire surface of the screen. This avoids the possibility of "sand cutting," which is occasioned by excessive velocity of fluid entering at any one point.

Grooves are so spaced that the drainage distance between the Keystone Wires is very short eliminating the possibility of openings becoming clogged with mud or sand.

These milled grooves do not weaken the screen body either for tensile strength or collapsing strength.

In very other respect the famous Layne Keystone Wire-Wrapped Screen remains the same with its reputation of safe dependable service, giving maximum production at lowest cost, a reputation builded by a quarter of a century's specialization in the manufacture of screens.

BOWLER CO.

TEXAS

Los Angeles, California

Vickers, Limited, London, England

CLASSIFIED DIRECTORY OF NEW EQUIPMENT

(Continued)

COMBINATION OIL AND GAS CARBURETORS—
W-K-M Company, Inc. 304

COMPRESSORS—
Ingersoll-Rand Company 48
Sullivan Machinery Company ..126

CONTROL HEADS—
J. H. McEvoy & Company 298
U. S. Tool Company 134

CONTROL VALVES—
Cameron Iron Works 7
Kerotest Manufacturing Company 162

CONTROLLERS—
Union Electric Manufacturing Company, The 102

CORE BARRELS—
Baker Casing Shoe Company 30
Sullivan Machinery Company ..126

CORE BITS—
Elliott Core Drilling Company.. 80
Hughes Tool Company 17
H. C. Smith Manufacturing Company 128

COUNTERBALANCES—
Link-Belt Company 104

COUNTERSHAFTS—
Allis - Chalmers Manufacturing Company 71

CROSS COMPOUND VALVE MOTIONS—
Volz Engineering Equipment Company, The 84

CROWN BLOCKS—
American Well & Prospecting Company, The 58
Beaumont Iron Works Company 300
Emsco Derrick and Equipment Company 33
International Derrick and Equipment Company 6
Marion Machine, Foundry and Supply Company, The 28
Oklahoma Iron Works 186
Regan Forge and Engineering Company, The 82
Republic Supply Company, The.. 58

CROWN BLOCK PULLEYS—
Oklahoma Iron Works 186

DEPHTHOMETERS—
Lucey Products Corporation, The 74, 184

DETACHABLE CORE HEADS—
Oil Well Core Drilling Company, The 293

DIESEL ENGINES—
Fairbanks, Morse & Company..154

DIESEL TYPE OIL ENGINES—
Tips Engine Works, The 110

DIFFERENTIAL UNLOADERS—
Chicago Pneumatic Tool Company, The 100

DISC BITS—
The Guiberson Corporation 88

DRAW WORKS—
American Well and Prospecting Company, The 58
Beaumont Iron Works Company 300
Emsco Derrick & Equipment Company 33
Oil Well Supply Company, The.. 21
Republic Supply Company, The 58

DRILL RODS—
Sullivan Machinery Company ..126

DRILLING BELTS—
Republic Rubber Company 12

DRILLING BITS—
Elliott Core Drilling Company.. 80
Kennedye-Plumb Corporation...168
Stearns-Rogers Mfg. Company... 14

DRILLING ENGINES WITH REVERSE CLUTCHES—
Weber Engine Company, The.. 72

DRILLING ENGINES—
Waukesha Motor Company 136

DRILLING MACHINES—
Alamo Iron Works 55
Star Drilling Machine Company, The 182

DRILLING VALVES—
Darling Valve and Manufacturing Company 30

ELECTRIC HANDSAWS—
J. D. Wallace & Company, The..113

ELECTRIC SUB-STATIONS—
Delta-Star Electric Company, The 152

ENGINES, HORIZONTAL, CLOSED CRANKCASE TYPE—
Stover Manufacturing & Engine Company, The 20

ENGINES WITH ROLLER BEARING CLUTCH—
Titusville Iron Works, The 16

ENGINE DRIVEN PUMPING UNITS—
Gardner-Denver Company, The.. 69
Novo Engine Company 140

FIELD BOILER INJECTORS—
Ohio Injector Company, The ..184

FIRE FIGHTING APPARATUS—
Pyrene Manufacturing Company 29

FISHING TOOLS—
Acme Fishing Tool Company The 118

FLOAT PLUGS—
Baker Casing Shoe Company ... 30

FLOAT SHOES—
Baker Casing Shoe Company... 30

FLOAT SWITCHES—
General Electric Company 128

FLOW HEADS—
Oklahoma Iron Works 186

FLOW METERS—
Pittsburgh Equitable Meter Company, The 79

FOAM GENERATORS—
American Fomon Company, The 142
Foamite-Childs Corporation 160

FORGE BLOWERS—
Champion Blower & Forge Company 69
Hutchinson Engineering Works 34
Star Drilling Machine Company, The 182

FOUR-WHEEL TRAILERS—
Spencer Trailer Company 192

FORGED CAST GEARS—
Hill Clutch Machine and Foundry Company 166

GAS COMPRESSORS—
National Transit Pump & Machine Company 79

GAS ENGINES—
Bessemer Gas Engine Company, The 65
Novo Engine Company 140

GAS REGULATORS—
Neilan-Schumacher Company 92

GAS ENGINE FUEL REGULATORS—
Neilan-Schumacher Company ... 92

GATE VALVES—
DeSoto Foundry and Machine Company, The 160
Jarecki Manufacturing Company 190

GEARED PUMPING POWERS—
Lufkin Foundry & Machine Company 185
National Supply Company, The 43

GEARED PUMPING UNITS—
Lufkin Foundry & Machine Company 185

GENERAL PURPOSE HOISTS—
Shaffer Specialty Company, The..128

GENERAL PURPOSE JACKS—
Duff Manufacturing Company, The 16

GENERAL PURPOSE PUMPS—
Allis-Chalmers Manufacturing Company 71
C. H. & E. Manufacturing Company 148
Gaso Pump & Burner Manufacturing Company 6
Tulsa Pump Company, The 192
Wheatley Brothers 138

GENERATING SETS—
Fairbanks-Morse & Company ...154

GOVERNOR GUARDS—
Pickering Governor Company, The 73

GREASE CUPS—
Link-Belt Company 104

HAND HOISTS—
Beebe Brothers 29

HIGH PRESSURE FITTINGS—
Oklahoma Iron Works 186

HOLD-UPS—
Texas Steel Company, The 12

HOLD-DOWNS—
Texas Steel Company, The 12

HORIZONTAL DUPLEX POWER PUMPS—
Worthington Pump & Machinery Corporation 177

HORIZONTAL TRIPLEX POWER PUMPS—
Worthington Pump & Machinery Corporation 177

HORIZONTAL DUPLEX PISTON PATTERN PRESSURE PUMPS—
Worthington Pump & Machinery Corporation 177

HYDRAULIC JACKS—
Black Hawk Manufacturing Company, The 174

HYDRAULIC LIFT PUMPS—
T. J. Wood 176

HYDRAULIC STANDING VALVES
United Iron Works, Inc. 292

IDLERS—

KICK-OFF VALVES—
Link-Belt Company 104
Stearns-Rogers Manufacturing Company. 14

IMPROVED SIDE WINCHES—
W-K-M Company, Inc. 304

INSERT PUMPS—
D. & B. Pump & Supply Company..116

IRON BODY VALVES—
Walworth Company, The 186

CLASSIFIED DIRECTORY OF NEW EOUIPMENT

(Continued)

JACK ADJUSTERS—
United Iron Works, Inc. 292

JACK AND LOAD BINDERS—
Peerless Supply Company, The .. 16

LEAK STOPPING DEVICES—
Miller Combination Bailer and Sand Pump Company 142

LIGHTING PLANTS—
Moon Manufacturing Company, The 146

LINE SPOOLERS—
Duro Engineering Company, The 50-55
L. O. Tekell and A. J. Graham..150

LOCK NUTS—
Columbia Nut & Bolt Company ..124

LONG STROKE PUMPERS—
Reschke Machine Works Company 190

LOW PRESSURE BURNERS—
Webster Engineering Company, The 176

MAGNET SWITCHES—
Penn Electric Switch Company, The 98

MECHANICAL GAS INJECTORS—
Bessemer Gas Engine Company, The 65

METAL PACKING—
Garlock Packing Company, The.. 80

METAL PACKING RINGS—
Volz Engineering Equipment Company, The 84

MOTORS—
Fairbanks-Morse & Company ...154
Lincoln Electric Company, The..122
Westinghouse Electric & Manufacturing Company, The 108-110

MOTOR TRUCK CRAWLERS—
Universal Crane Company 134

MUD-HOG PUMPS—
Oil Well Supply Company, The.. 21

MUD-LADEN FLUID—
National Pigments & Chemical Company 94

NON-FREEZING VALVES—
Continental Supply Company, The 144

OFF-SET FISHING TOOLS—
Baker Casing Shoe Company ... 30

OIL FUEL GOVERNORS—
Lucey Products Corporation, The 74, 184

OIL WELL CEMENT—
Ash Grove Lime & Portland Cement Company, The 32

ORIFICE METERS—
Metric Metal Works, The ...150-152

OSCILLATING STIRRUP BEARING—
Beaumont Iron Works Company.300

OVERSHOTS—
Lebus Rotary Tool Works 296

PARAFFINE REMOVERS—
Kemical Process Company, The ..299
Neumeyer & Son 302

PIPE LAYING BOOMS ON TRACKS
W-K-M Company, Inc. 304

PIPE LINE PAINT—
Cook Paint & Varnish Company, The 122

PIPE LINE PUMPS, DUPLEX AND TRIPLEX, HORIZONTAL—
Goulds Pumps, Inc. 20

PIPE LINE VALVES—
Continental Supply Company, The 144

PIPE CUTTING MACHINES—
Landis Machine Company 164

PIPE CUTTING AND THREADING MACHINES—
Landis Machine Company 164

PIPE STRAIGHTENING MACHINES—
Duro Engineering Company ..50-55
W-K-M Company, Inc. 304

PIPE THREADING MACHINES—
Landis Machine Company 164
Toledo Pipe Threading Machine Company 94

PITMANS—
Marion Machine, Foundry & Supply Company, The 28

PITMAN OSCILLATORS—
Boykin Machinery & Supply Company, The 172

PLUG VALVE LOCKING DEVICES
Barco Manufacturing Company, The 25

POLISH ROD CLAMPS—
M. and K. Pump & Specialty Company, Inc. 174

POLISH ROD GRIPS—
United Iron Works, Inc. 292

POLISH ROD SCREW HANGERS—
United Iron Works, Inc. 292

PORTABLE BUILDINGS—
Southern Mill & Manufacturing Company. 305

PORTABLE COMPRESSORS—
Clark Brothers Company 12
Gardner-Denver Company, The .. 69

PORTABLE DRAW WORKS—
Lucey Products Corporation...74-184

PORTABLE DRILLING RIGS—
Emsco Derrick & Equipment Company 33

PORTABLE PIPE CUTTING MACHINES—
Oxweld Acetylene Company, The 100-102

PORTABLE PUMPS—
Emsco Derrick & Equipment Company 33
Gaso Pump & Burner Manufacturing Company 6
Wheatley Brothers 138

PORTABLE TURBO GENERATORS—
Pyle-National Company, The..... 88

PORTABLE VACUUM RIGS—
Portable Vacuum Rig Company.. 84

PORTABLE WELDERS—
Fusion Welding Corporation 158
Westinghouse Electric & Manufacturing Company, The 108-110

POWER THREADERS—
Nye Tool & Machine Works 102

PRESSURE REGULATORS—
G. M. Davis Regulator Company, The 168

PRODUCTION HOISTS—
Beaumont Iron Works Company.300
Oil Well Supply Company, The. 21

PULLING MACHINES—
General Machine Company 80

PUMP PISTONS—
MacClatchie Manufacturing Company, The 166

PUMPING ENGINES—
Clark Brothers Company 12
Fairbanks-Morse & Company ...154

PUMPING GEAR UNITS—
Philadelphia Gear Works, The..113

PUMPING JACKS—
D. and B. Pump & Supply Company 116

PUMPING POWERS—
Kansas City Hay Press Company.160

REDUCTION GEARS—
Texas Steel Company, The 12
Waukesha Motor Company 136

R. R. VALVES—
Walworth Company, The 186

REEL SUPPORTS—
National Turnbuckle Derrick Company. 98

RELIEF VALVES—
Black, Sivalls & Bryson, Inc. 302
J. A. Campbell 94

ROCK BIT CONE FISHING SOCKETS—
American Iron & Machine Works 110

ROTARY BITS—
C. W. Herrin 174

ROTARY MACHINES—
American Well & Prospecting Company, The 58
Emsco Derrick & Equipment Company 33
Lucey Products Corporation ..74-184
Oil Well Supply Company, The .. 21
Republic Supply Company, The.. 58
Titusville Iron Works, The. 16

ROTARY HOSE—
Continental Supply Company, The 144

ROTARY SWIVELS—
American Well & Prospecting Company, The 58
Regan Forge & Engineering Company, The 82
Republic Supply Company, The.. 58

ROTARY UNDERREAMERS—
MacClatchie Manufacturing Company, The 166

ROTARY WINCHETS—
Lebus Rotary Tool Works 296

SAFETY HOOKS—
Jensen Brothers Manufacturing Company 34

SAFETY LATCHES—
National Supply Company, The.. 43

SAFETY POP VALVES—
The Inferno Company 112

SAFETY PRESSURE HEADS—
J. H. McEvoy & Company 298

SAND PUMPS—
M. and K. Pump & Specialty Company, Inc. 174

SAND REELS—
Marion Machine, Foundry & Supply Company, The 28

SCREW TAKE-UPS—
Link-Belt Company 104

SEAMLESS CASING—
American Seamless Tube Corporation, The 73

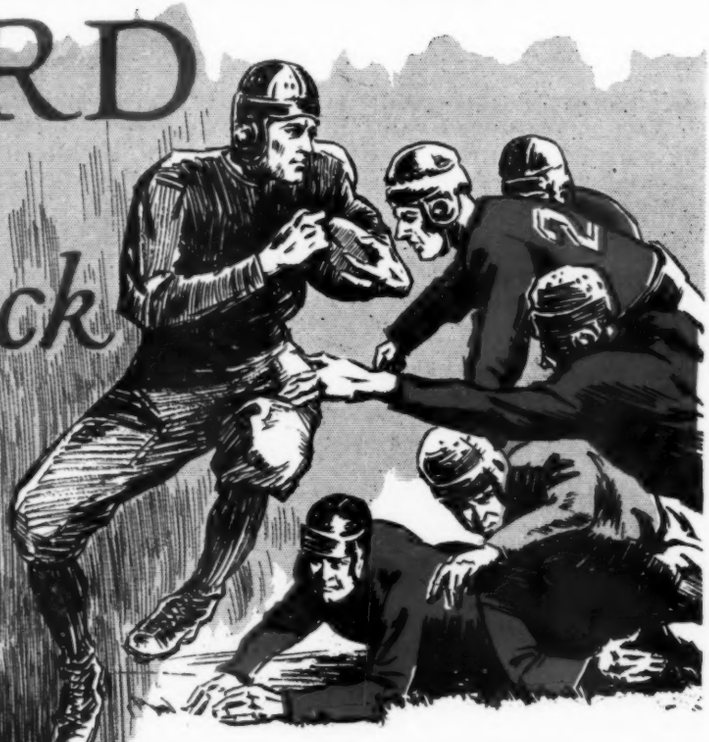
SELF FLUSHING TRAVELING VALVES—
United Iron Works, Inc. 292

SEPARATORS—
Duro Engineering Company ...50-55
M. and V. Tank Company 32

SEPARATOR CONTROLS—
Trumble Gas Trap Company ...128

(Continued on page 98.)

ON GUARD *for the Surprise Attack*



High pressure attacks come without warning. They surge forward with irresistible fury, taking advantage of every unguarded opening. Only the very huskiest gate valves can endure the strain and check such mighty forces.

A special line of Darling Gate Valves is made of forged steel because this material has the necessary reserve strength required for high pressure fields. Darling Forged Steel Gate Valves are made for 1500 lbs. and 3000 lbs. working pressures.

Furnished in Inside Screw, Stationary Stem Type, in Screwed Ends, Flanged Ends and Flanged Ends with Companion Flanges bolted on.

Forged Steel Gate Valves

DARLING

Say you saw it in The OIL WEEKLY

All Darling Valves have features that make for safe and easy operation, tight closing and long life.

The **discs** are independent of each other and of the wedges, hence free to revolve and change their position on seats each time the valve is operated.

The **stem** is extra large with a straight clear passage down through the wedges. Nothing to bind, break or bend.

The **wedges** are of the compound equalizing type, released at first turn of stem.

The **seats** are concealed in the body and fully protected from injury.

Further details on request.

Darling also builds Gate Valves of Darvel Semi - steel, Bronze Mounted, in all sizes and types for every branch of the Oil Industry, whether producing, conveying, refining or marketing.

Darling Valve & Manufacturing Company

Williamsport, Pa.

New York Chicago Oklahoma City Houston

Mid-Continent Distributors:

Frick-Reid Supply Co. Atlas Supply Co.
International Supply Co. Petroleum Supply Co.

California Distributor:

Petroleum Equipment Company, Los Angeles

Forged Steel Gate Valves

DARLING

Say you saw it in The OIL WEEKLY

CLASSIFIED DIRECTORY OF NEW EQUIPMENT

(Continued)

SET SHOES—
J. H. McEvoy & Company 298

SINGLE ACTING TWO-STAGE COMPRESSOR CYLINDERS—
Bessemer Gas Engine Company, The 65

SINGLE JAW TONGS—
Billings and Spencer Company, Inc. 302

SLUSH PUMPS—
National Supply Company, The.. 43
Wilson-Snyder Manufacturing Company 132
Titusville Iron Works, The..... 16

SPARK PLUGS—
Stitt Ignition Company, The.... 20

SPEED FLANGES—
Rhode Island Fittings Company, The 142

SPEED REDUCERS—
Link-Belt Company 104
Pacific Gear and Tool Works, The 74

SPLIT CASING RINGS—
Oklahoma Iron Works 186

SPLIT DRUM WINCHES—
W-K-M Company, Inc. 304

SPUDDERS—
Fort Worth Well Machinery and Supply Company 62
Star Drilling Machine Company, The 182

STANDING VALVES—
Axelson Machine Company, The.180
Baird Tool Works, The 72

STATIONARY BASES FOR PIPE CLEANING MACHINES—
W-K-M Company, Inc. 304

STATIONARY ENGINES—
Fred E. Cooper 8

STEAM SEPARATORS—
W-K-M Company, Inc. 304

STEEL—
Paul Arbon and Company 48

STEEL CLAMPS—
Sheffield Steel Corporation, The. 20

STEEL DERRICKS—
National Turnbuckle Derrick Company 98

STEEL DERRICK LADDERS—
International Derrick and Equipment Company 6

STEEL FITTINGS—
Stockham Pipe and Fittings Company 181

STEEL LIGHT TOWERS—
Truscon Steel Company 8

STOP COCKS—
MacClatchie Manufacturing Company, The 166

STUFFING BOXES—
Oil Well Supply Company, The. 21

SUCKER RODS—
Columbus Sucker Rod Company, The 144
Walter O'Bannon Company, The.100

SUCKER ROD ELEVATORS—
D. and B. Pump and Supply Company 116
Fuller Machine and Forge Works 122
Oil Well Supply Company, The. 21

SUCKER ROD GUIDES—
American Supply Company 55
The Guiberson Corporation 88

SUCKER ROD HOOKS—
Dunn Manufacturing Company, The 73
Marion Machine, Foundry and Supply Company, The 28
Oil Well Supply Company, The. 21

SUCKER ROD WRENCHES—
D. and B. Pump and Supply Company 116
Duro Engineering Company ..50, 55

SWAB VALVES—
Bradford Motor Works, The....168

SWINGS—
Marion Machine, Foundry and Supply Company, The 28

SWIVEL TOOL WRENCHES—
Oklahoma Iron Works 186

THEFT-PROOF SOCKETS—
Ren Manufacturing Company, The 92

TRACTORS—
J. I. Case Threshing Machine Company, The 24
Cleveland Tractor Company 158

TRACK LAYING TRACTORS—
Republic Truck Sales Corporation 172

TRACK TRUCKS—
Traction Machine Company, The.181

TRACTOR OPERATED HOISTS—
Caterpillar Tractor Company ...148

TRACTOR OPERATED WINCHES—
H. W. Cardwell Company 8, 12

TRACTION DITCHERS—
Buckeye Traction Ditcher Company 110

TRAILERS—
H. B. May Manufacturing Company, The 32

TRAVELING BLOCKS—
American Well and Prospecting Company, The 58
Emsco Derrick and Equipment Company 33
Oklahoma Iron Works 186
Republic Supply Company, The. 58

TRUCKS—
Selden Truck Corporation, The..162
White Company, The 170,172

TRUCK CHAINS—
Columbus McKinnon Chain Company, The 74

TRANSMISSION APPARATUS—
Allis-Chalmers Manufacturing Company 71

TRIP SPEARS—
Acme Fishing Tool Company, The 118

TRUCK ENGINES—
Graham Brothers 113

TRUCK LIFTS—
Yale and Towne Manufacturing Company, The 170

TRUCK TIRES—
Miller Rubbers Company, The.. 46

TRUCK WINCHES—
Braden Steel and Winch Company, The 176
Ellis Manufacturing Company, The 112

TUBING HANGERS—
Hercules Tool Company 152

TUBING HEADS—
H. C. Smith Manufacturing Company 128

TUBING HOISTS—
National Supply Company, The. 43

TUBING HOOKS—
Walter O'Bannon Company, The.100

TUBING PROTECTORS—
Smith Separator Company, The.138

TUBING ROTATORS—
Hercules Tool Company 152

TUBING SPIDERS—
Oil Well Supply Company, The. 21

TUBING STOPS—
Dunn Manufacturing Company, The 73

TUBING STRIPPERS—
The Guiberson Corporation 88

TURBINE GENERATORS—
Westinghouse Electric and Manufacturing Company, The ..108,110

TWO CYCLE GAS ENGINES—
Joseph Reid Gas Engine Company, The 302

UNDERREAMERS—
Acme Fishing Tool Company, The 118

VAPOR CONTROLS—
J. A. Campbell 94

VENTILATING FANS—
American Blower Company, The 172, 174

WATER ALARM SIGNAL PANELS—
General Electric Company 128

WEIGHT INDICATORS—
Axelson Machine Company, The.180
Martin-Loomis Corporation 146

WELDED TANKS—
Frick-Reid Supply Company 14

WELDING MACHINES—
General Electric Company 128
Lincoln Electric Company, The.122

WELL SCREEN—
Layne and Bowler Company ...305

WIRE LINE CLAMPS—
Acme Fishing Tool Company, The 118
Western Supply Company, The.308

WORKING BARRELS—
Ellis Manufacturing Company...112
Merit Oil Equipment Company, The 73

WORKING BENCHES—
Toledo Pipe Threading Machine Company 94

WRENCHES—
J. H. Williams and Company....124

WRIST PINS—
Latex Iron and Steel Works.... 7

WRIST PIN ATTACHMENTS—
D. and B. Pump and Supply Company 116

The.. 46
Com-
.....176
pany,
.....112
.....152
Com-
.....128
The. 43
The.100
The.138
.....152
The. 21
pany,
..... 73
.... 88
Manu-
.108,110
s—
Com-
.....302
pany,
.....118
..... 94
pany,
172, 174
....128
The.180
...146
. . 14
....128
The.122
...305
pany,
....118
The.308
y...112
pany,
..... 73
hine
..... 94
....124
..... 7
rs—
Com-
....116

HOISTING EQUIPMENT

SECOND TO NONE

By

SHAFFER

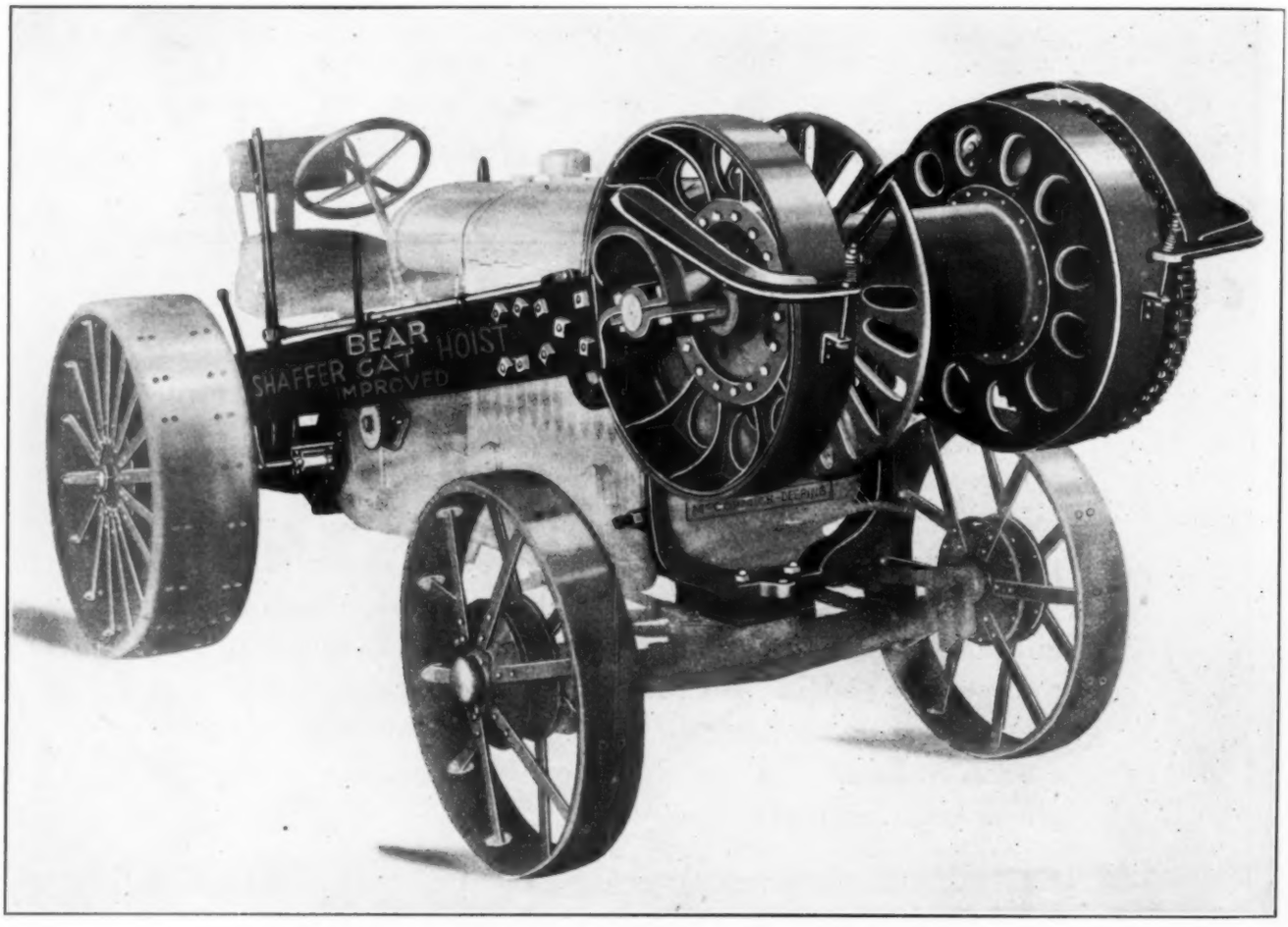
THE oil producing industry is increasing the efficiency of its hoisting work through the use of portable power equipment, thereby reducing labor and operating costs, and increasing the daily output. There has long been a demand among oil producers for a tractor-powered hoist with sufficient power and flexibility to be used on every power job about the oil field. Such a hoist should be safe for such uses as pulling casings, tubing and sucker rods, or for fast bailing work, and at the same time possess roadability. The McCormick-Deering or Fordson Bear Cat combination successfully meets all these requirements.

THE McCormick-Deering or Fordson Bear Cat combination is a quality machine throughout. It meets the demands of field superintendents of many oil companies of all sizes, all of whom contributed suggestions from personal experience in the building of this hoist. It is a product of several years' experience of hoist building, powered by the well established and dependable McCormick-Deering Industrial or Fordson tractor. Simplicity of construction and quality of materials insure long life with a small maintenance expense.

The Bear Cat hoist is not an attachment but rather is built into and made a part of the tractor.

SHAFFER'S BEAR

POWER WITH ECONOMY



Type I. F. on 10-20 McCormick-Deering Tractor—Front End Hoist

THE MOST ECONOMICAL OPERATING HOIST ON THE MARKET

SPECIFICATIONS

DRIVE—Thru Tractor Transmission, three speeds forward, one reverse.
CONTROL—Clutch and Brake Levers, operated from Driver's seat.
BRAKES—Double drum, 5"x30". 840 sq. in. braking surface, lined with the old reliable RUSCO Lining.
DRUM—13"x26" Free Rolling on Hyatt Roller Bearing.
LINE CAPACITY—½"—5000'; 9/16"—4000'; 5/8"—3200'
PULLING CAPACITY—Single Line.
Low Speed—11,000 Lbs. at 59' per Minute.
Second Speed—5700 Lbs. at 116' per Minute.
High Speed—2240 Lbs. at 295' per Minute.
ROAD SPEEDS—2—4 and 10 Miles per hour.
TOOL BOX—26"x48"x6".
DIMENSIONS OVERALL—15'x7'.
TOTAL WEIGHT Tractor and Hoist—7860 Lbs.

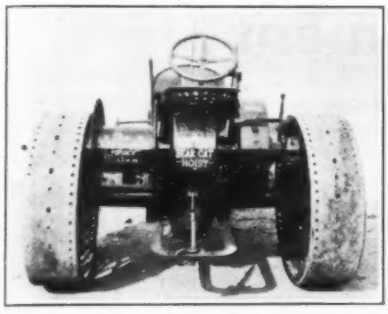
NOTE—This Hoist and Tractor can also be furnished with Caterpillar tread at an additional cost.

THE SHAFFER SPE

TULS OKL

CAT HOISTS

SPEED WITH SAFETY



Type I. R. on 10-20 McCormick Deering Tractor. Rear End Bear Cat Hoist.

SPECIFICATIONS

DRIVE—Thru Tractor Transmission, Three Speeds Forward, one Reverse.

CONTROL—Clutch and Brake Lever, operated from Driver's seat.

BRAKES—Single drum, 5"x24" 420 sq. in. Braking surface, Lined with RUSCO Brake Lining.

DRUM—10¾"x12½" Babbited Bearings.

LINE CAPACITY—½"—1550'.
9/16"—1225'.
5/8"—1000'.

PULLING CAPACITY—Single Line.
Low Speed—10,000 Lbs. at 66' per Min.
Second Speed—5125 Lbs. at 129' per Min.
High Speed—2010 Lbs. at 329' per Min.

LENGTH OVERALL—14'x5'-6".

A COMPACT, POWERFUL, ROADABLE UNIT WHERE DEEP BAILING IS NOT DESIRED

A VERY DESIRABLE, EFFICIENT UNIT BUILT TO STAND THE ROAD AND HARD USAGE

SPECIFICATIONS

DRIVE—Thru Tractor Transmission, Three Speeds Forward, One Reverse. Control-Clutch and Brake Levers operated from Driver's seat.

BRAKES—Single Drum, 20" Dia. 324 sq. in. Braking Surface.

DRUM—10¾"x11" Keyed to Shaft, Babbited Bearings.

LINE CAPACITY—½"—925'
9/16"—725'
5/8"—600'

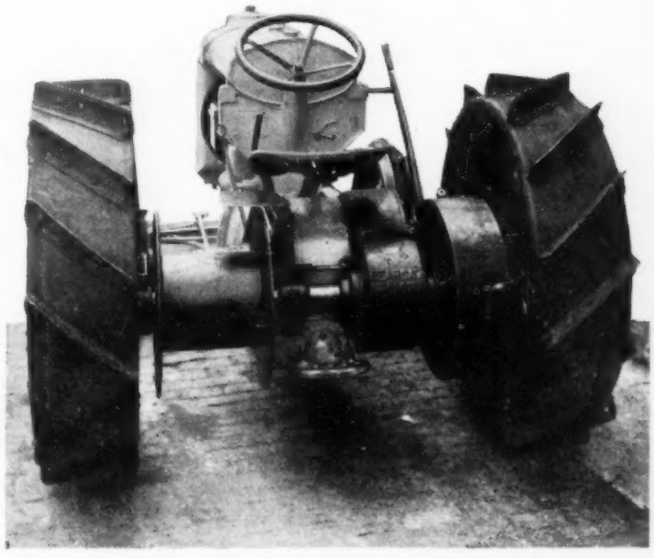
PULLING CAPACITY—Single Line.

	Std. Ratio.	Spec. Ratio
Low Speed	56' per min.	37' per min.
Load	11,120 Lbs.	17,020 Lbs.
Second Speed	104' per min.	68' per min.
Load	6040 Lbs.	9260 Lbs.
High Speed	260' per min.	169' per min.
Load	2410 Lbs.	3695 Lbs.

SPECIAL High Speed Reverse has 623' per min. line travel.

LENGTH OVERALL 9' x 5'-2".

ROAD SPEEDS—1½—3—and 6 miles per hour.



Type F. R. on Fordson Tractor. Rear End Bear Cat Hoist

PECIALTY COMPANY

TULSA, OKLA.

The Shaffer Specialty Co.

Manufacturers and Distributors of

Patented Oil Well Equipment

ALMETAL SAND REEL SUPPORTS
SAFETY SWABS
4-IN-1 SUCKER ROD SOCKETS
WORKING BARREL AND SPECIAL SOCKETS
SUCKER ROD ELEVATORS
FLUID SEAL LINER BARRELS
SUCKER ROD HOOKS
SAFETY PICK-UP IRONS

AIR LIFT "ECONOMY" FLOW VALVES

JIFFY COMBINATION SOCKETS
JIFFY SUCKER ROD CONNECTIONS
SAFETY CASING CLAMPS
SUCKER ROD SPIDERS
SAFETY AND SWIVEL "S" LINKS
3-IN-1 SUCKER ROD WRENCHES
CLUTCH ADJUSTING SCREWS
AIR LIFT "KICK-OFF" VALVES

BEAR-CAT HOISTS FOR INTERNATIONAL-"McCORMICK-DEERING" AND FORDSON TRACTORS

SHAFFER
PRODUCTS
"Are Precision Made"

PLANT AND OFFICE, 113-115 SOUTH DENVER, TULSA, OKLA.
Address All Communications to the Company
P. O. BOX 1434 TELEPHONE 7271

New and Improved FIELD EQUIPMENT *for* 1927

ON the following pages *The* OIL WEEKLY has brought together a condensed, but complete, illustrated description of all new and improved equipment brought out during the past year for the producing and transportation branches of the oil industry. In this section you will find an answer to your every question on late developments in the industry's mechanical department.

The annual Equipment Review Number of *The* OIL WEEKLY supplements your equipment catalogs and has in easy reference form valuable data that can not be secured elsewhere. This service has been made possible only through the close co-operation of the many manufacturers of oil field supplies.

The information given is as complete and authentic as it is possible to get it and descriptions have been included on all available products, represented to us by the manufacturer as being new or improved, whether or not the manufacturer is an advertiser in *The* OIL WEEKLY.

You will have use for this issue, so give it a permanent place in your buying records for future reference.

Classfied Index on Page 91
in regular news form

NEW EQUIPMENT FOR 1927

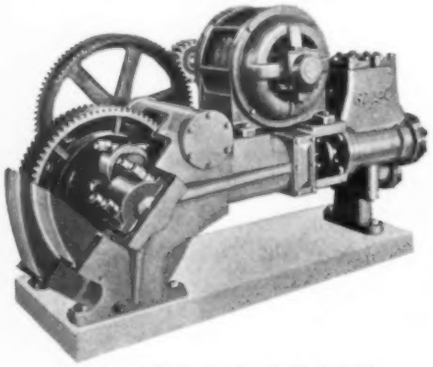
New Pump Designs

GASO PUMP AND BURNER MANUFACTURING COMPANY

Gaso Pump & Burner Manufacturing Company, Tulsa, announces three items of improved equipment now being offered the oil industry.

Large Capacity Pump

The new pump unit is designed for pumping oil or water at pressures up to



GASO LARGE CAPACITY PUMP

1400 pounds. Its pinion shaft is fitted with Timken roller bearings. It is furnished with pulley or belt drive for electric or engine operation. Interchangeable lines and allowance for different gear ratios to suit different conditions make it a suitable unit for general service.

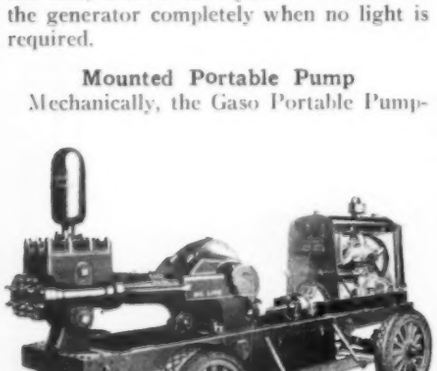
Lighting Attachment

By means of a device known as the Aladdin Duplex Generator, pumping stations equipped with the Gaso Portable Pumping Unit may now be lighted with electricity.

The generator is mounted on the fly wheel housing and driven by the flywheel of the engine. Consuming about one-eighth horsepower of the engine power, it furnishes current for a string of seven or eight light bulbs of ordinary candle power. A clutch arrangement, self-contained in the unit, enables the operator to shut off the generator completely when no light is required.

Mounted Portable Pump

Mechanically, the Gaso Portable Pumping Outfit is equipped with Buda power unit; has automatic lubrication (the driving gear, running in an oil bath, distributes oil to all bearings), and a worm drive.



GASO MOUNTED PORTABLE PUMP

More complete particulars on all the items will be mailed from the company, upon request.

Twenty-Two Hour Bomb

ZERO HOUR TORPEDO COMPANY

The Zero Hour Torpedo Company, 408 Cosden Building, Tulsa, Oklahoma, has recently placed on the market a new model Zero Hour Electric Bomb. The new model is a 22-hour bomb.

In design, general construction, size, and method of handling and operation, the new bomb is identical with the standard 11-hour bomb. The only essential difference is in the watch used.

In this watch the hour hand moves only one-half as fast as that of an ordinary watch, and therefore takes 24 hours to make a complete circuit of the dial. Since the firing pin loop occupies the same place on the watch dial as in the standard 11-hour type, a safe setting limit of 22 hours is thus provided.

More information will be supplied by the company, on request.

New Ideco Products

INTERNATIONAL DERRICK AND EQUIPMENT COMPANY

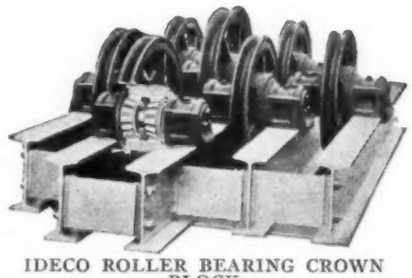
The International Derrick and Equipment Company, Columbus, Ohio, announces the addition of a roller bearing crown block to its present line of blocks.

This new design "C" roller bearing block incorporates the use of Timken tapered roller bearings and Idecalloy Manganese steel sheaves.

Unless otherwise specified, all sheaves are furnished for standard wire lines.

Timken bearings carry all loads from all directions, the tapered bearings absorbing side thrusts in addition to direct loads. Their capacity for thrust, shock, speed and radical loads comes from the nature of their construction. Both the inner and outer races are made of Chrome-Molybdenum steel, the outer race being pressed under pressure into the sheave.

Cold rolled four and one-half-inch steel shafts, highly polished and ground to size to fit into a special patented adjustable bearing clamps permit a wide range of adjustments of the sheaves on the beams and also ease of assembly on the derrick top.



IDECO ROLLER BEARING CROWN BLOCK

Beams are of 40-pound, 12-inch structural I beams, conforming to the specifications of the American Society for Testing Materials, fastened together by channel separators and short bolts, all hot dip galvanized.

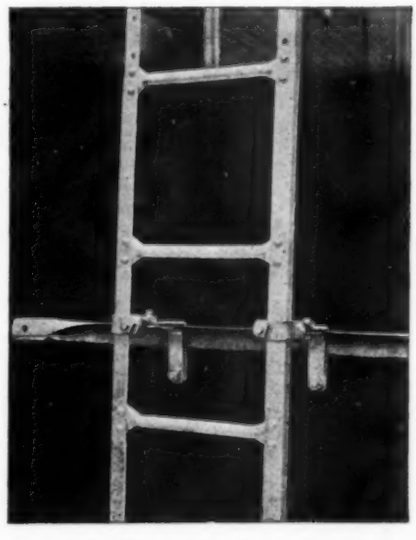
Large grease reservoirs are provided in the sheaves themselves and lubrication is accomplished through the use of the Zerk-Alemite system.

Improved Steel Ladder

The company also announces improvements in its steel derrick ladder which gives the ladder added safety features.

The Ladders on Ideco steel derricks are built with one-inch round pressed steel rungs, permanently fastened to angle side rails by a double riveted construction, and the entire ladder is hot dip galvanized after fabrication.

Special patented clamps are provided for attaching the ladder to the derrick girts. These clamps are adjustable so that the derrick can be moved if necessary.



IDECO IMPROVED STEEL LADDER

Bull Hoist

The "Ideco" Bull Hoist was designed to operate under the most severe kinds of bull wheel service, and in actual tests has fully come up to expecta-

tions, according to its manufacturers.

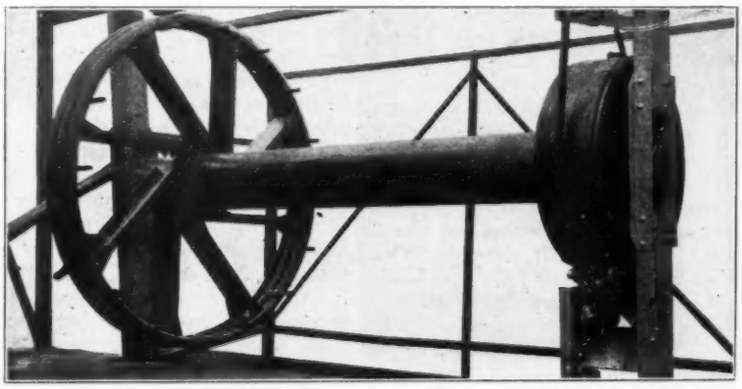
The small diameter of the brake wheel, namely 42 inches, with its compact design enables the operator to effect many economies by using the bull hoist.

The bull hoist is air cooled. Incorparated in its construction is a compensating feature which allows it to expand and contract freely under the action of frictional heat.

The brake drum is a solid gray iron casting. The brake surface is accurately machined, as is the entire brake wheel. If in the course of many years the drum casing should become worn, it can easily be replaced quickly in the field by the removal of eight machine bolts.

Johns-Manville folded and compressed asbestos brake lining is used in the construction of the brake band. Brass wire heat conductors are interwoven throughout the band.

Another feature of this design is that the brake band has been made so that it can be reversed to compensate for wear. It has been found that brake bands will wear about 50 per cent faster at one end than at the other and to meet this, the reversible feature has been incorporated.



IDECO BULL HOIST

Gudgeons are of the removable type. The tug wheel is eight feet in diameter located on the shaft in the same manner as on the ordinary bull wheel.

These wheels are furnished in standard lengths, namely 13 feet six inches, shoulder to shoulder of gudgeons. The shafts are furnished in either 16-inch or 18-inch diameter with three-eighths of one-half-in. wall. Thicker walls than these, together with variations in the shaft length, can be furnished upon specification.

More detailed information can be had by requesting the same from the company.

Cameron Improved Items

CAMERON IRON WORKS

Cameron Iron Works, Houston, has developed improvements in the control equipment which it manufactures that strengthen the company's line of products.

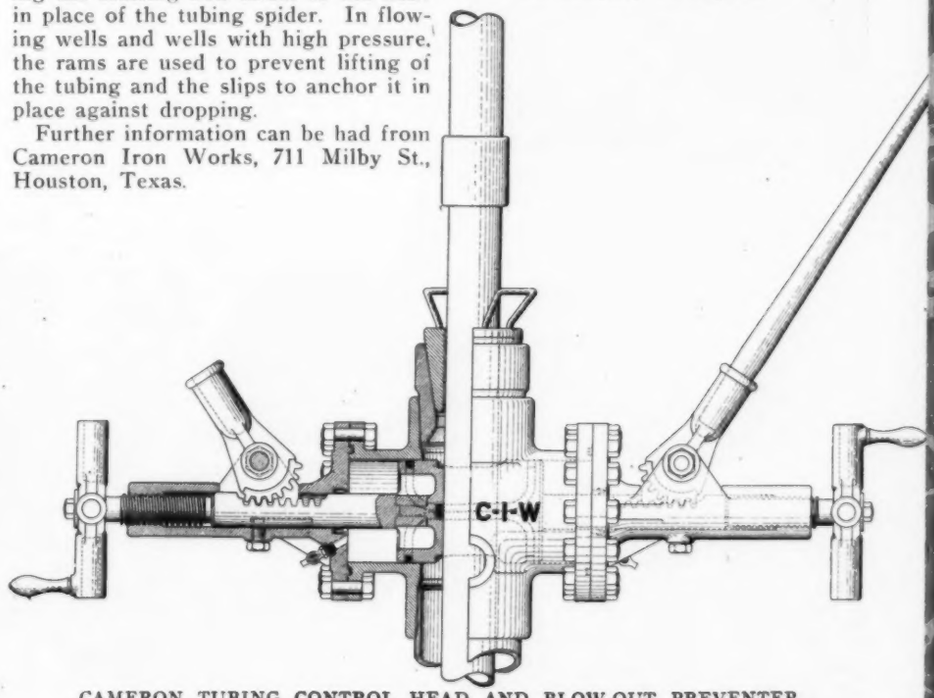
Tubing Control Head and Blow-Out Preventer

The new tubing control head and blow-out preventer embodies safety features of the old blow-out preventer, and in addition is made to serve as a control head at the top of the well.

The rams are designed to grip the tubing and withstand pressures up to 500 pounds per square inch.

The rams are designed to grip the tubing, and withstand pressures up to 500 pounds per square inch. Provisions are made for the insertion of air or gas for pressure lift recovery. The head is equipped with outlets in each side of the body which connect with the casing area, outside the tubing wall. The rams are operated by lever-jacks to insure quick closing. In addition to the lever-jacks each ram can be locked in place by a lock-screw. The manufacturers claim that by using this control head, any kind of well hook-up can be effected. Provision is made for attaching, either tubing slip and spider on the top of the head, or using the rams as the tubing support and attaching the stuffing box direct to the head in place of the tubing spider. In flowing wells and wells with high pressure, the rams are used to prevent lifting of the tubing and the slips to anchor it in place against dropping.

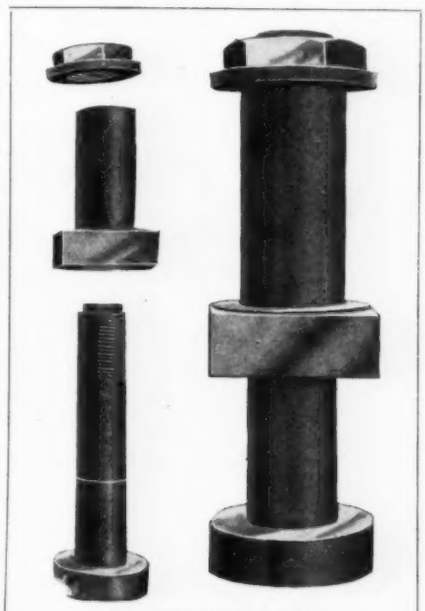
Further information can be had from Cameron Iron Works, 711 Milby St., Houston, Texas.



CAMERON TUBING CONTROL HEAD AND BLOW-OUT PREVENTER

Willcox Wrist Pin

LATEX IRON AND STEEL WORKS

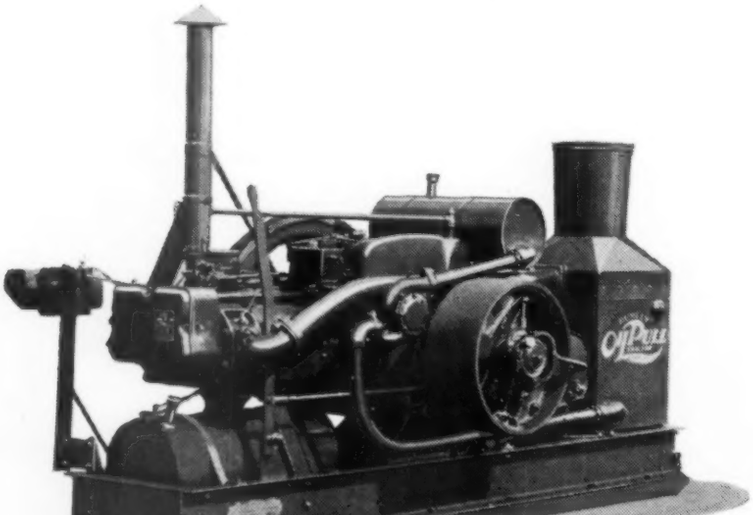


WILCOX WRIST PIN

Latex Iron and Steel Works, Shreveport, Louisiana, is marketing the Willcox Wrist Pin, a new device for use on standard rigs and pumping units.

The pin is made in three parts: The pin proper on which are left-handed threads, the bearing sleeve, and the retaining nut. The pin is assembled by left-hand threads. The motion of the rig, coupled with the weight of the rods and fluid, acts to tighten the pin at all times. The pin is also locked securely against the crank by the bearing sleeve and all parts are locked by the pitman retaining and lock nut.

More specific information can be had from the company on request.



NEW OILPULL STATIONARY ENGINE

New Cooper Products

FRED E. COOPER

Fred E. Cooper, 18 S. Madison, Tulsa, Oklahoma, announces two new items of interest to oil producers; a cleaning out attachment for the company's winch tractor, and an OilPull Stationary engine.

The winch drum shaft and the jack shaft on the regular tractor winch has been extended, making it possible to install the cleaning-out attachment by putting on a big web sprocket. This sprocket

FRED COOPER CLEANING OUT ATTACHMENT

runs idle on the drum shaft, which has a wrist pin to run a spudding line or walking beam. The sprocket is driven by a chain from a stationary sprocket keyed on the jack shaft. These features give the cleaning-out attachment portability which makes it particularly adaptable to field use. The outfit is designed for use on wells as deep as 3,000 feet.

OilPull Stationary Engine

Through reconstruction of the old stationary engine the unit has been adapted to oil field work. The engine is now available on a stationary frame. The cooling system and engine is built in one unit on the frame which is from 10 to 12 feet long, over all. Sizes range from 35 to 70 horsepower.

A large, heavy duty shoe clutch is mounted on the end of the crank shaft, which is self-centering and adjusted by turning one nut. Pushing this clutch diaphragm in on the shaft until it jumps past the center, locks the clutch in engagement. The clutch mechanism when the clutch is engaged all turns in harmony with the crankshaft.

Fuel required is kerosene, distillate, or other low grade oils. A gas mixer can be furnished to be used with natural gas wherever desirable.

More information on both pieces of equipment can be obtained from the company, on application.

Flood Light Tower

TRUSCON STEEL COMPANY

The Truscon Steel Company, Youngstown, Ohio, has recently added to its already long list of steel products an especially designed flood light tower. Applicable in the oil industry for practical and protective night lighting, these towers are built in standardized sections for erection to any required height and are available either galvanized or painted. The towers are erected on concrete base, are square and cross-braced to secure greatest resistive strength against stresses from any angle, yet with minimum weight. Shipped in 25-foot sections or completely knocked down.

More information will be supplied from the company, on request.

Winch For Tractors

H. W. CARDWELL COMPANY

H. W. Cardwell Company, Wichita, Kansas, is marketing a new Cardwell-Keltner winch for use with "Caterpillar" 30 tractors.

Specifications for the winch are as follows:

Speeds and pounds pull: There are six speeds forward and two reverse. The forward speeds range from 50 to 1000 line feet per minute, with single line pounds pull from 20,600 pounds on the lower speeds to 900 pounds on the highest. In reverse, the low speed is 60 line feet per minute; reverse high is 370 line feet per minute.

Drum: Capacity, 5000 feet of ⅝ cable, 15 inches in diameter, 30½ inches between flanges, mounted on Hyatt roller bearings. Adjustable divider. Drum white oak legged, to protect cable.

Brakes: Two brakes, cast steel, 30 inches in diameter by four-inch face, both controlled by one lever. 600 square inches effective brake area. Directly mounted on winding drum with 14¾-inch alloy bolts.

Sprockets and Shafts: Sprockets cast steel hubs with detachable steel rims—all shafts mounted in Hyatt bearings—all shafts heat treated and ground to size. Counter shaft three inches, drum shaft 3¼ inches.

Transmission: Cotta Transmission, connected by a universal joint to standard "Caterpillar" power take-off.

Clutches: Both clutches are 18-tooth dental type, and may be engaged with drum running 25 revolutions per minute. The entire mechanism is con-

NEW CARDWELL-KELTNER WINCH FOR USE WITH "CATERPILLAR" 30 TRACTORS

THE GUIBERSON DISC BIT

is breaking all speed records!

NEW!

Based on actual performance over many months, in Seminole and other fields, the new GUIBERSON Disc Bit is FASTER than any other bit designed for soft and semi-hard formations.

PENETRATES HARD ROCK. While designed for softer formations, this bit, furthermore, introduces a second important speed factor in its ability to drill through the hardest rock. It will go economically through rock shells, and thus eliminates frequent and costly pulling out to change bits.

Cost of spares per foot of hole drilled to date has shown a remarkable saving in favor of this bit. Contractors say: "It pays for itself on the first hole." Fully patented.

A Few Features of Design

Axis is offset from true radius of bit, so that discs have full circumferential travel.

Reamers in cheek plates keep hole reamed practically to bottom.

Large cutters are on different axes from small, so that space between cutters is self-cleaning.

Flushing channels extend to extreme bottom of bit, keeping bottom of hole clean for cutters.

Head of bit is flat on two sides providing ample passage for water and cuttings.

Due to speed of the bit, efficient, large capacity pumps are recommended.

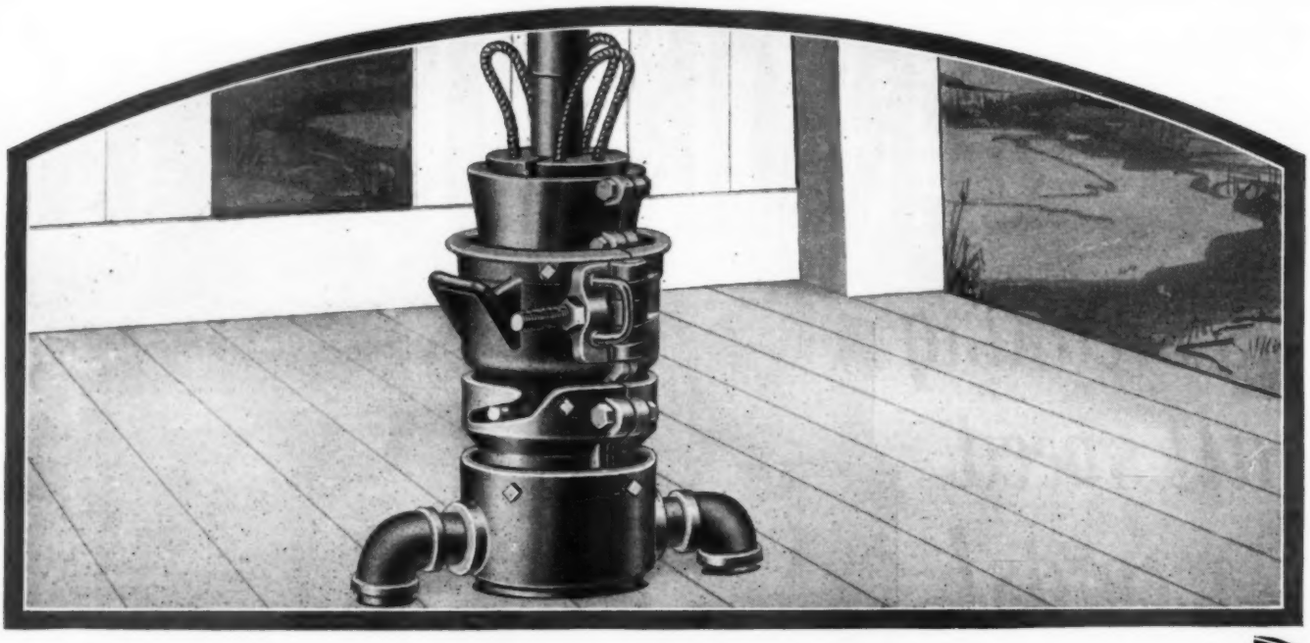
"Better Be Safe Than Sorry"

THE GUIBERSON CORPORATION
Box 1106, Dallas, Texas
CALIFORNIA BRANCH: 1506 Santa Fe Ave., Los Angeles
402 W. First St., TULSA **321 S. Osage St., PONCA CITY** **506 Trust Bldg., NEWARK, O.**

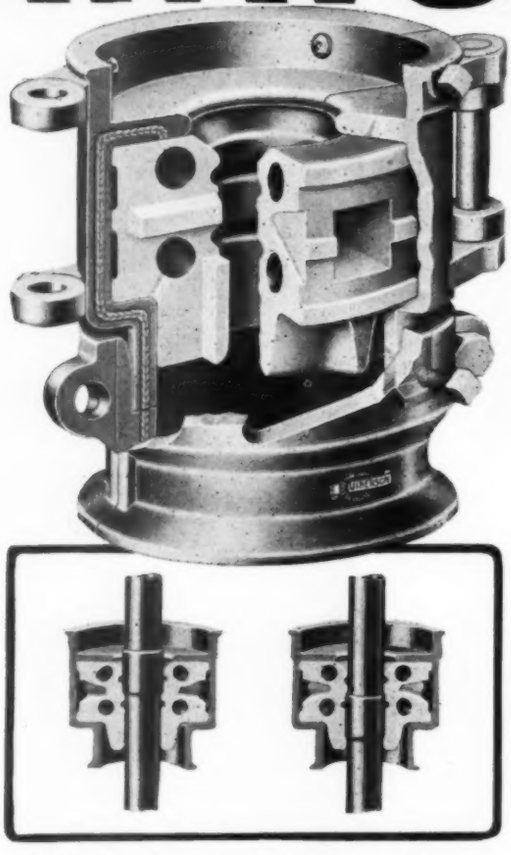
GUIBERSON

BETTER BE SAFE THAN SORRY

Say you saw it in The OIL WEEKLY



ANNOUNCING!



Rubbers have ingeniously designed composition chambers which render them sufficiently resilient to admit both upset and standard couplings.

THE GUIBERSON TUBING STRIPPER

The GUIBERSON Tubing Stripper has been developed to answer the demand for a stripper simple in design, easy to handle, speedy in operation, and which provides an absolute seal between casing and tubing. This stripper strips the tubing DRY and provides a tight seal at all times—yet it permits the collars to pass readily.

The stripper is made in two halves, hinged, with handy latch for closing around pipe. It latches instantaneously to the adapter. The joint where the halves fit together is packed by means of a square flax packing permanently fixed in a groove and which cannot possibly blow out. Convenient handles are provided which can be used for tie-downs.

The lightness, simplicity, efficiency and economy of this device now render it altogether practical for the operator to equip *any well* with a GUIBERSON Stripper and thus protect himself against loss of valuable oil and gas and safeguard his property and men against fires, asphyxiation, etc.

"Better Be Safe Than Sorry"

THE GUIBERSON CORPORATION
Box 1106, Dallas, Texas

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402 W. First St., TULSA — 321 S. Osage St., PONCA CITY — 506 Trust Bldg., NEWARK, O.

GUIBERSON

BETTER BE SAFE THAN SORRY

Say you saw it in The OIL WEEKLY

Better Be Safe Than Sorry!

THIS SUCKER ROD GUIDE REDUCES TUBING WEAR

The Guiberson bronze Sucker Rod Guide is made in sizes and styles to fit all sizes and makes of sucker rods.

Its primary function is to hold the rods centered in the tubing and provide a large-circumference contact and a bronze-to-iron bearing between tubing and rods. Wear on tubing is tremendously reduced.

The spiral design provides ample fluid passage, yet gives a complete circumferential bearing. This design has a sufficient churning action to keep paraffin stirred up and prevent deposit on tubing. It also tends to tighten the couplings on the down stroke through the fluid, but does not have a reverse tendency on the up stroke, as on that stroke it lifts the fluid column with it.

The illustration shows the design for use with Guiberson Panel-Thread Sucker Rod Couplings.

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GUIBERSON

BETTER BE SAFE THAN SORRY — GUIBERSON

trolled through the master clutch on the tractor.

Installation may be made on any "Caterpillar" 30 of a later number than S-3100 or PS-1. Only five holes are required in the draw bar plate, and one hole in the master clutch lever. Both plate and lever may be removed and drilled in the ordinary drill press.

More information will be mailed from the company by request.

New Clark Products

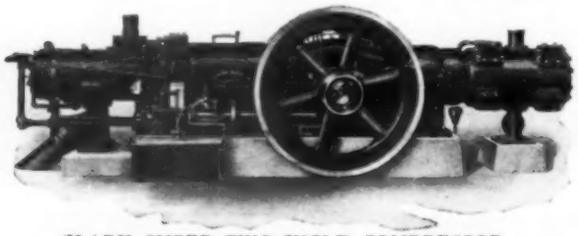
CLARK BROTHERS COMPANY

Clark Brothers Company, Olean, New York, announce several new items of interest to producers.

Clark Super Two-Cycle Compressor

The Super Two-Cycle Gas Engine operates as follows:

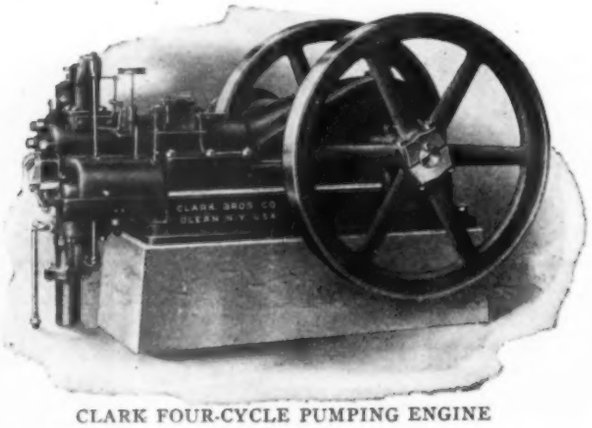
Its piston at the end of its forward stroke uncovers the exhaust ports which



CLARK SUPER TWO-CYCLE COMPRESSOR

are in the bottom of the cylinder at the forward end and through these uncovered exhaust ports rush the hot waste gases. Scavenging is done by air rushing into the cylinder through inlet ports in the top of the forward end of the cylinder which ports also are uncovered by the piston at the end of its forward stroke and at the end of the piston is of a shape to deflect the rushing incoming air to the other end of the cylinder, this incoming air having been somewhat compressed in the rather large chamber between the piston and the front cylinder head.

When the piston on its return stroke has covered the exhaust ports then the gas inlet valve, which is at the upper part of the other end of the cylinder, opens, admitting the proper amount of gas, the amount being controlled by the governor. As this incoming gas is at something like 15 pounds pressure, much higher than is the pressure of air charge in the cylinder at this time (the beginning of the return or compression stroke of the piston) there is in consequence of this considerable higher pressure of the incoming gas a great deal of very advantageous turbulence bringing about thorough mixing of the gas with the air charge.



CLARK FOUR-CYCLE PUMPING ENGINE

Clark Four-Cycle Pumping Engine

The four-cycle engine is 40 horsepower. All working parts are completely enclosed. Lubrication is automatic.

The bored main bearings are fitted with replacable babbitt liners.

Gears are hardened and are enclosed in an oil-tight gear box.

The belt pull comes on the bearings each side of the belt pulley, and the clutch shaft is full floating within the hollow shaft that carries both the belt pulley and the two clutches.

The clutch and brake bands are outside.

The go-ahead clutch is of the spur-faced friction band type.

The reverse clutch is of the spur-gear planetary type.

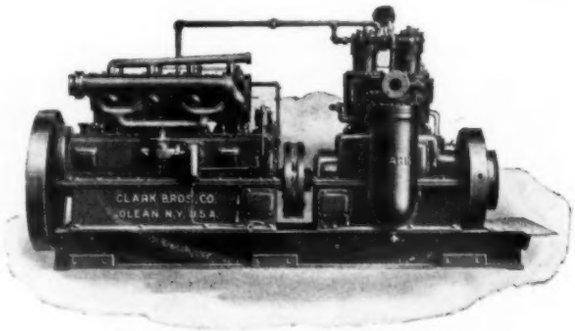
Clark Portable Compressor

The portable compressor is of the enclosed type, with automatic lubrication.

Specifications on the compressor are as follows: two vertical cylinders, each two-stage, 10 by 4⅛ bore by 11-inch stroke; piston displacement, 330 cubic feet per minute; actual delivery, 330,000 cubic feet per 24 hours at zero pounds intake, to 400 pounds discharge; maximum delivery pressure by throttling the intake, 1000 pounds.

The engine has four vertical cylinders, each 8½-inch bore by 11-inch stroke. Power rating is 75-horse power at 400 revolutions per minute. Natural gas can be used as fuel.

Floor space of the outfit is 15 feet by 53 inches. Height over the engine and compressor is 85 inches.



CLARK PORTABLE COMPRESSOR

Clark Tandem Compressor

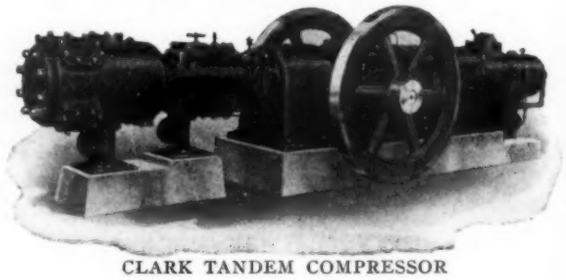
The two-stage compressor is suitable for pumping oil wells by the air or gas lift method, for cleaning wells by blowing, and for maintaining pressure on oil sands.

The machine is a compact unit. Pistons and the piston rings of both cylinders can be removed for inspection and replacement of rings, if necessary, without disturbing the cylinders or the pipe connections.

Cylinders are made to withstand 1200 pounds per square inch to meet emergencies and to start flowing wells having a high fluid level.

Any combination of cylinder sizes that will be the most efficient to meet any particular condition of intake and discharge pressure can be furnished.

Further information on all these items of equipment will be supplied by Clark Brothers Company, Olean, New York.



CLARK TANDEM COMPRESSOR

New Drilling Belt

REPUBLIC RUBBER COMPANY

The Republic Rubber Company, Youngstown, Ohio, is introducing a new drilling belt which will be known as Champion.

Champion is a 39-ounce duck belt with a friction pull of 20 to 22 pounds, with a 2000-pound rubber cover. The duck that goes into Champion is measured on the basis of 36x50½ inches. This means that the threads are smaller but that more are woven into a square inch.

Further information will be mailed on request.

Reduction Gear on Power

TEXAS STEEL COMPANY

A steel pumping power designed for pumping from increased depths, being manufactured by the Texas Steel Com-

What the Oil Industry Needs Is Plenty of Co-operation!

During periods of over-production there is only one effective way to correct the situation and conserve this great natural resource and that is to *slow down the drill.*

This company has kept its drilling activities at an absolute minimum during over-production and proposes to continue this policy until conditions warrant a resumption of drilling.

Skelly Oil Company, a complete unit, engaged in the production, refining and marketing of petroleum and petroleum products believes that the aforementioned policy can be followed by the industry without ultimate disaster.

GREETINGS TO THOSE ATTENDING
THE AMERICAN PETROLEUM INSTITUTE
AT CHICAGO.

SKELLY OIL COMPANY

Executive Offices: TULSA, OKLAHOMA
Refinery: El Dorado, Kansas
Branch Offices: Kansas City, Mo.; Omaha and Minneapolis

pany, Fort Worth, Texas, embodies several new features.

The application of the reduction gear principle as applied in driving the eccentrics of a vertical pumping power affords a method of power transmission that is selective and compact. The reduction gear drive delivers power from three points to the eccentric drive or master gear. All gears run in a bath of oil, just as in the transmission of an automobile and are not dependent upon mechanical means of lubrication. No part of the mechanism of the power interferes with spacing or the operation of the rod lines to the connected wells.

Material used in the construction, with the exception of the belt pulley, is cast steel throughout, and all bearing surfaces are bushed with a special bronze.

The hollow shaft and base plate is an individual steel casting, reinforced at points of greatest stress. The eccentrics and eccentric hubs are also integral steel castings.

The oiling system of this power is said to be different from most other installations, in that its working parts are not dependent on a pump for maintaining circulation. Every bearing is run in a bath of gallons of lubricating oil which has to be replenished at intervals of weeks or months. Eccentrics are provided with bearing surfaces said to insure minimum of friction. These bearings also run in a bath of oil.

Clevis connections are of new design and are so constructed as to cut the possibility of wearing to the minimum.

More information will be supplied by the company on request.

New Donovan Boiler

FRICK-REID SUPPLY COMPANY

Frick-Reid Supply Company, Tulsa, is now distributing the new Donovan 75 and 85 horsepower 200 pound A. S. M. E. code oil country boiler, made by the Donovan Boiler Works, Parkersburg, West Virginia.

These boilers were designed for deep rotary drilling, which takes not only a large volume of steam, but also a high pressure.

Pop valve connections are placed in the dome head in such a manner as to avoid the necessity for a Y base or any fittings.

Blow-off and feed epenings are constructed so that there are no projecting flanges.

Elimination of welds particularly on the bottom of the boiler, and the adoption of a one-piece mud ring as standard, are new features on the boiler.

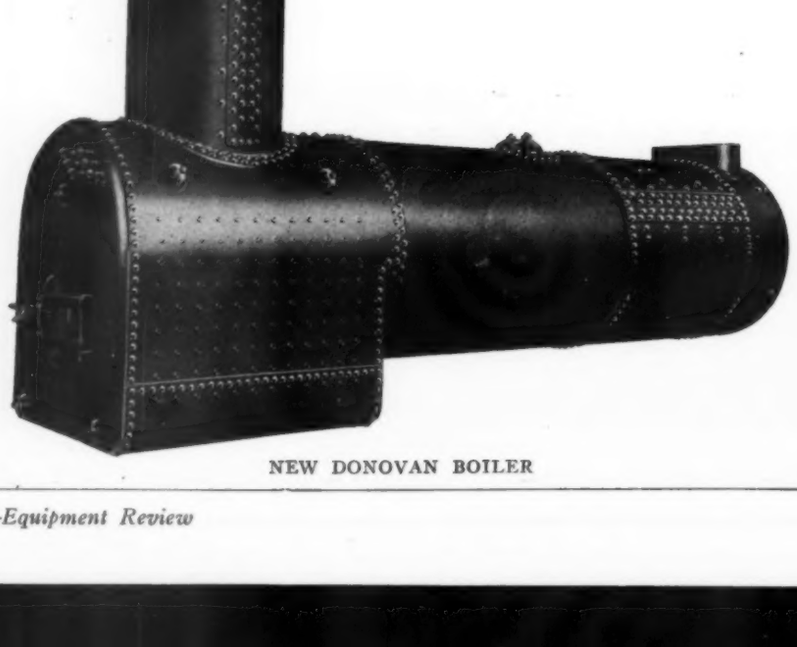
New Donovan Welded Tank

NEW DONOVAN WELDED TANK

The company also announces a new type design of crude oil electrically welded storage tank for the small settled production districts. All stock sizes are furnished with one-piece flanged decks and bottoms.

A combination all-steel manhole and thief-hole is added as standard equipment on each tank.

Further information can be had by writing the company direct, or through communication with any branch of Frick-Reid Supply Company.



NEW DONOVAN BOILER

Speed Drilling Bit

STEARNS-ROGER MANUFACTURING COMPANY

A speed bit put on the market a short time ago by the Stearns-Roger Manufacturing Company, Denver, Colorado, is rapidly making a name for itself in the Rocky Mountain fields, and according to its manufacturers, has special features of construction that makes it outstanding.

A number of drilling rigs in the Big Muddy, Wyoming, field are using the bit, and one operator reported 1850 feet of hole made with the bit in five days.

Exceptional speed is possible, it is said, on account of the unusual angle at which the cutting discs are placed. The cutters are placed at a very flat angle to the bottom of the hole, so that the bit cuts and chips.

The large water carrying capacity of the bit enables cuttings to be washed away rapidly and provides a clean surface to the cutters at all times. Water discharges at the point of cutting.

The body of the bit is made from chrome nickel steel. Cutters are of a special heat treated alloy steel.

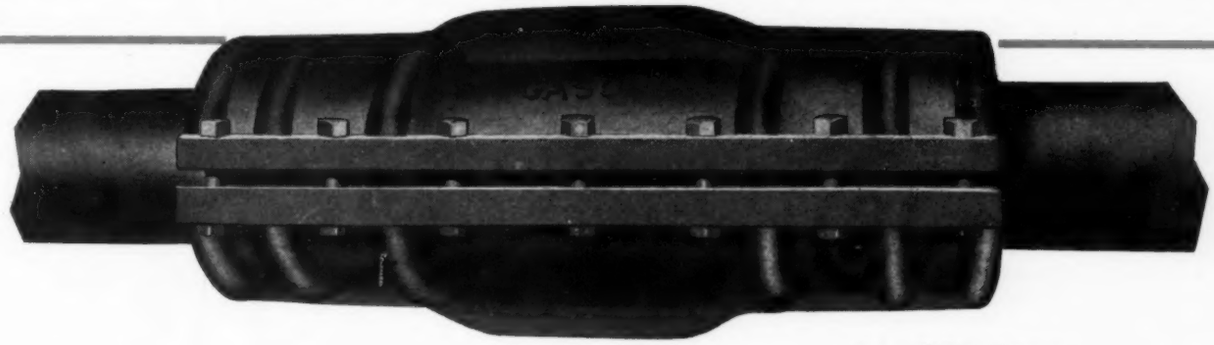
New Kick-Off Valve

The company also announces that the Carlisle Kick-Off Valve will be ready for distribution to the oil trade shortly.

This device, invented by C. C. Carlisle, engineer for the Prairie Oil & Gas Company, and in use in their Wyoming wells for a long time, consists of a balanced valve attached to the tubing of a well that is being flowed with air or gas pressure. The valves are placed at intervals between liquid level and foot piece and are intended to kick off the well in small heads at approximately flowing pressure, eliminating the heavy expense of large compressor installations and special fittings usually necessary to build up the high kick-off pressure.

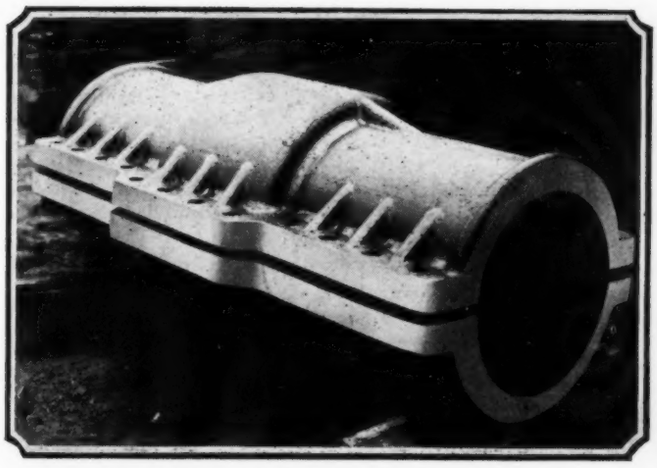
The idea is that all valves remain open when submerged with float chambers full, due to buoyancy of the float. It is claimed that as flowing pressure is applied, the liquid level is lowered to the uppermost valve which, being open, admits the air or gas to the column of oil, emulsifying it and starting the flow of the head above the valve. As the liquid level is lowered, the float chamber slowly drains through a drain plug, closing the valve and directing the pressure to the valves below. The drainage opening is of such size as to assure that the valve next below is in action before the closing of the one above. This process is repeated until the liquid level is lowered to the foot piece with the well flowing from the bottom of the tubing and all valves closed.

Other desired information will be supplied by the company at Denver, or by writing any supply house.



—for OIL Lines

GASO RIVER CLAMPS



—for GAS Lines

Extra Heavy-Extra Strong

GASO River Clamps, for oil lines and gas lines, are built extra heavy and extra strong. Manufactured by the Tulsa Iron Works Company—Foundry Division of the Gaso Pump and Burner Mfg. Co.—they are made of the same extra quality castings that are used in making the famous Gaso Oil Industry Pumps. Styles for Oil lines have six extra ribs extending around the entire clamp, and an extra rib running the entire length of the clamp. Styles for Gas lines have offset recesses for taking Dresser Couplings, and are strongly reinforced at all points of strain.

GASO River Clamps have been used in the construction of many of the country's largest oil and gas pipe lines.

The Tulsa Iron Works Company maintains a fully equipped pattern shop, and handles a limited amount of jobbing work, such as piston heads, cylinders, liners, etc., for operating companies in its territory. Highest grade work is guaranteed. Your inquiry is invited.

TULSA IRON WORKS COMPANY
TULSA, OKLAHOMA

TULSA IRON WORKS
FOUNDRY DIVISION GASO PUMP & BURNER MFG. CO.

New Tico Products

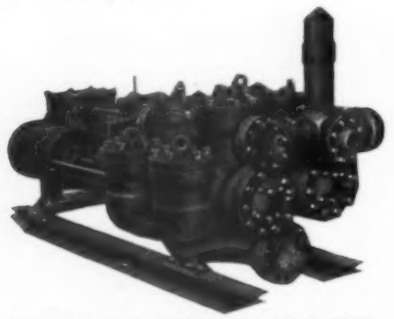
TITUSVILLE IRON WORKS

The Titusville Iron Works, Titusville, Pennsylvania, has added several items to its line of oil field equipment during the past year.

Acme Heavy-Duty Slush Pump

The heavy-duty model slush pump is made in two sizes: 14x7¼x16, and 15x7¼x18. Slush ends are designed for 1000 pounds working pressures and steam ends for 225 pounds.

The two cylinders on the pump end are separate and are interchangeable. Valve chambers are large and there are no air pockets.



TITUSVILLE ACME HEAVY-DUTY SLUSH PUMP

A floating type, spool crosshead allows quick adjustment.

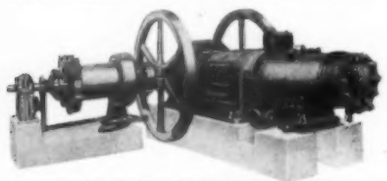
One-piece rocker arms with single rollers provide for quick changing if necessary.

There are grease gun connections at all pins. Two strainers are installed in the discharge manifold connecting the separate cylinders.

Improved Engine With Roller Bearing Clutch

The new engine is equipped with a 20-inch diameter Timken roller bearing clutch, which makes the unit adaptable for deep operation.

The clutch can be thrown into re-



TICO IMPROVED ENGINE

verse without slacking speed.

Alemite fittings simplify lubrication on the outfit.

Main bearings are extra long with lipped caps, and are provided with die-cast babbitt liners which are interchangeable.

A force-feed oiler is provided having seven feeds which oil the two main bearings, crank pin, crosshead, cylinder, and two cylinder sides. Special lubricating device is built into the main frame underneath the lower crosshead slide, with a central riser in the lower guide, fed from the oil reservoir running under and at each end of the guide.

Enclosed Oil-Bath Rotary

All moving parts in the new rotary

TITUSVILLE ENCLOSED OIL-BATH ROTARY

are housed in and run in an oil bath.

The gear table is set on taper rollers and into the base below where it is journaled at the bottom, the base forming a journal bearing for the lower part of the table. A novel hold-down ring is then placed at the top of the bevel gear and extends all the way around the table downward, where it journals the table at the top. The hold-down ring forms a journal bearing for the upper part of the table.

Bandwheel Power

The rim of the new bandwheel power is made up of steel angles rolled after being riveted together. This feature is said to give the rim a crown which tends to hold the belt in proper position.

A dual oiling system is provided,

TICO BANDWHEEL POWER

both force and gravity feed. A filter chamber is provided to hold waste or other filtering medium.

Centrifugal Pump

The centrifugal pump is single stage, single suction, open impeller type, with screwed connections for both suction and discharge.

Main bearings in the pump are equipped with Timken roller bearings. Bearings are enclosed in dust-proof housings and are provided with Alemite connections.

Further details can be obtained by communicating with the company, at Titusville.

Jack and Load-Binder

PEERLESS SUPPLY COMPANY

The Peerless Supply Company, Tulsa, announces a new addition to its line of products, the Peerless Boomer, a combination jack and load binder for booming, hoisting, jacking and stretching jobs.

PEERLESS JACK AND LOAD-BINDER

The boomer is made of all steel. The binder has been tested to 8500 pounds. A weight of 1200 pounds has been lifted without the assistance of any extra leverage other than that supplied by the original extra long handle.

Further information will be mailed on request to the company.

General Purpose Jack

DUFF MANUFACTURING COMPANY

The Duff Manufacturing Company, Pittsburgh, Pennsylvania, has on the market a new addition to its line of jacks, known as the Duff General Purpose Jack, No. 540.

DUFF GENERAL PURPOSE JACK

This jack is turdily built, but it is light in weight for its capacity. It can be conveniently handled and spotted and can be operated by one man.

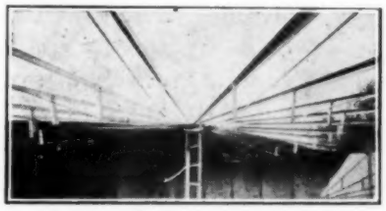
Design of the operating mechanism is of improved Barrett construction.

Hinged steel base permits safe operation at an angle.

Four methods of application are possible: straight lifting, load applied on head; with chain; with claw, and with foot-lift.

Double socket-lever aids effective operation in close and cramped quarters.

Additional information can be secured by writing the company.



NEW MALONEY TANK

New Maloney Tanks

MALONEY TANK MANUFACTURING COMPANY

The Maloney Tank Manufacturing Company, Tulsa, announces new tanks of 5000 and 10,000 barrel sizes.

In all sizes of these tanks from 1500 to 10,000 barrels capacity, decks are supported by heavy cantilever trusses.

All bolts used in these tanks are special oil heat treated.

The tanks are now painted with special pearl gray paint.

The paint is scientifically applied by means of a fine spray which forces the paint into the pores of the metal.

Further information will be sent by the company, on request.

Hughes Core Bit

HUGHES TOOL COMPANY

In response to the demand of the oil and sulphur producing industries, the Hughes Tool Company has developed and perfected a core bit for use with rotary process of drilling. Two types of Hughes cutter heads are available for coring the wide range of formations encountered from the hardest to the softest. The roller type of cutter head will make and take cores in hard abrasive rocks. It also successfully handles hard and medium formations, such as sand rock, sandy lime, limestone, anhydrite, chalk, gypsum and the hard shales. The scraping type of cutter head is designed for the softer shales and other unconsolidated formations.

CUTTERS FOR ROLLER CORE BARREL FOR HARD FORMATIONS.

CUTTERS FOR CORE BARREL FOR SOFT FORMATIONS.

By the use of different sizes of cutter heads a wide range of hole diameter can be used. Bits range from three and seven - eighths inches to 17⅝ inches. Core barrel sizes range from one and one-fourth inches to seven inches. Working barrel sizes are from two to 10 inches.

The Hughes core bit consists essentially of eight different parts, the cutter head, body, core catcher, core barrel, time limit valve, drill collar, working barrel and working barrel sub.

The soft formation cutter head is of one-piece construction and can be substituted for the roller type cutter head. It has cutting edges tipped with a hard facing metal to resist wear. A deep groove in the shoulder connects the water courses in the body with those in the cutter head so that the flushing fluid is jetted on the blades and bottom of the hole to prevent balling up.

ASSEMBLY OF HARD FORMATION BARREL SHOWING WATER COURSE.

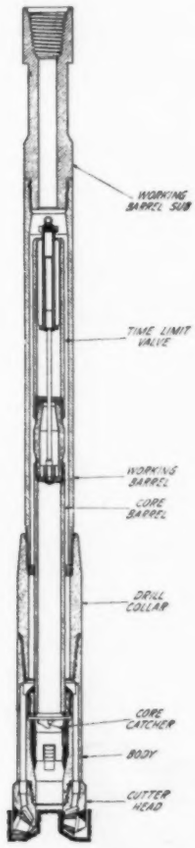
CORE CATCHER

The roller type of cutter head for hard formations is furnished as a unit ready to screw on the core bit body. The cutters are supported by hardened and ground pins welded to the forged and heat treated cutter head. This has proven to be the most successful method of securing the pins in the head. It has proven to be more satisfactory and economical to scrap worn cutter heads and replace them with new ones rather than redress them. The conical roller cutters are so spaced that the bit head rotates true with the center of the core.

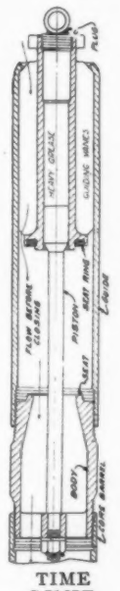
A deep groove in the shoulder of the cutter head distributes the flushing fluid from the body to water holes above each cutter, keeping the teeth clean and the bottom of the hole clear. Deep flutes cut on the outside of the cutter head provide ample flushing space. The cutter head is provided with an Acme thread tool joint box for connection to the core bit body, making for quick removal

The core bit body is made of heat treated alloy steel and provides a connection between the cutter head, working barrel and core barrel. All threaded connections are of a special Acme tool joint design. The tapered bowl for the core catcher is machined at the lower end of the body. Holes to conduct the flushing fluid to the cutter head are drilled longitudinally down the wall of the core bit body.

ASSEMBLED BARREL FOR HARD FORMATIONS



CROSS SECTION OF BARREL



TIME LIMIT VALVE

Briefly, the Hughes Core Catcher consists of a substantial seamless steel ring which serves the double purpose of supporting the tapered, case-hardened toothed slips and guiding the core into the core barrel without obstruction. A new and important feature of the Hughes Core Catcher is that the slips do not come in close contact with the core until the bit is raised from bottom. This allows for unobstructed entrance of the core into the catcher and thence into the barrel. The tapered slips are welded to heat treated leaf springs which are secured to the body, and are normally held by these springs away from the core. Curved spring fingers, tipped with a hard facing metal, are fastened to the inner surface of the core catcher body at its upper end. The tips of these fingers always remain in contact with the core, so that when the bit is raised, these fingers press the catcher downwardly, which, in turn, causes the tapered slips to engage with the core. The greater the weight of the core, the tighter the slips hold.

All Hughes Core Bits are of the double tube construction, that is, the flushing fluid is restricted between an inner and outer tube, termed respectively the core barrel and working barrel. The core barrel, which protects the core from the washing effect of the flushing fluid, is made of accurate smooth bore, seamless tubing with a special Acme thread tool joint connection at the bottom where it screws into the core bit body. The Acme thread provides ruggedness for this part which must be unscrewed every time for core removal.

The Hughes Time Limit Valve, located at the top of the core barrel, supplies the means for a predetermined flushing period (from 10 to 30 minutes as desired) just before making core. This allows the core barrel and bottom of the hole to be thoroughly washed of foreign material. After thorough washing, the valve shuts off all flow through the core barrel and the mud is forced to flow on the outside of the core barrel, down past the cutters. The time limit valve is simple in construction and operation. Before going into the hole it is only necessary to unscrew the plug at top, fill the grease chamber with heavy grease furnished with the bit, and then screw the plug in tight. The valve is then ready for operation. This valve is actuated by the force of the mud and will not operate until the pump is started. It closes very slowly, because of the resistance offered by the grease which is forced out around the close-

a new

THE newest member of the GASO family has made its bow and already seems destined to duplicate the phenomenal success of the portable unit introduced sometime ago. Here are eight reasons why:

1—Designed for pumping oil or water at pressures up to 1,400 pounds.

2—Every working part of the pump is enclosed, being oil tight and dust proof.

3—It is entirely self-lubricating, every working part running in an oil bath.

4—Equipped with open-hearth steel continuous tooth Herringbone gears, center driven, running in oil, assuring the highest efficiency and quietness of operation.

5—Has interchangeable liner fluid end in sizes from 2½″ to 7″ with 10″ stroke. The liners and pistons can be replaced quickly and easily to meet any change in working conditions.

6—The pinion shaft bearings are TIMKEN TAPER ROLLER BEARINGS. The main bearings are lined with genuine babbitt and both are easily adjustable to wear.

7—Pumps can be furnished with pulley for belt drive, with electric motor mounted on the frame and driven thru Silent-Chain or Fibre pinion and steel gear, or direct connected thru flexible coupling for engine drive.

8—Allowance has been made for different gear ratios to suit driving conditions, making this pump an ideal pump for any pumping conditions of a general nature.

A word from you will bring full details to your desk.

GASO PUMP & BURNER MFG. CO.
Tulsa, Oklahoma

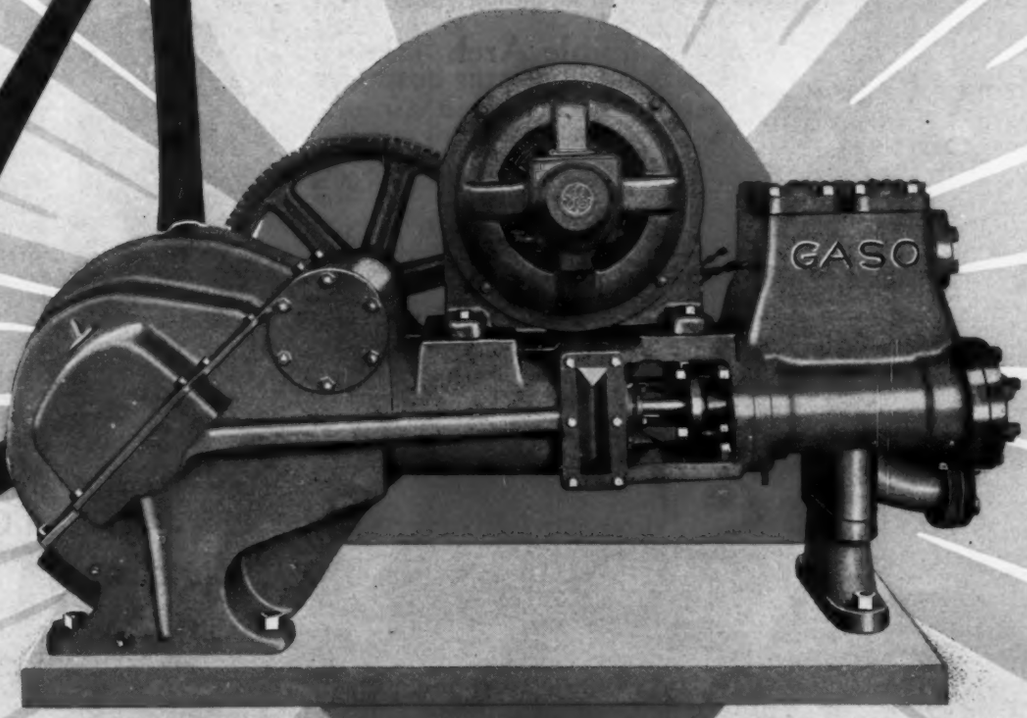
. . . Gaso makes a full line of oil-industry pumps and fittings. Each serves a definite need in the industry, yet all incorporate a certain basic principle of design—the principle of fewer but stronger parts.

. . . Central location in Tulsa means reasonable freight rates, prompt delivery and quick service when service is most urgently needed. Added to the recognized quality of Gaso products it helps to explain the wide use that Gaso Pumps have attained.

GASO
for every oil

gaso

Designed to Meet the Demand for a Large-Capacity, High-Pressure Pump



PUMPS
industry need

Say you saw it in The OIL WEEKLY

fitting plunger in the grease chamber. When the valve has approached within one-fourth inch of its seat, it abruptly closes because of the enlarged clearance at the top of the grease barrel. It is not difficult to tell when the valve seats, for the immediate laboring of the pump indicates closure. The rate of closing can be varied over a wide range by using greases of different stiffness. The stiffer the grease the more slowly the valve will close. The Hughes Time Limit is constructed of brass throughout.

The working barrel for all sizes up to and including 9⅞-inch is made of upset seamless drill pipe, while for the larger sizes, seamless casing is used.

For ease of handling an overshot sub is furnished at the top of the working barrel and has a neck diameter equal to the drill pipe used. The length of this neck is ample to allow for handling a complete core bit with elevators, while the slips are in place in the rotary table. The upper end of this sub will be furnished to fit a tool joint pin or fish tail drill collar with the threading as specified.

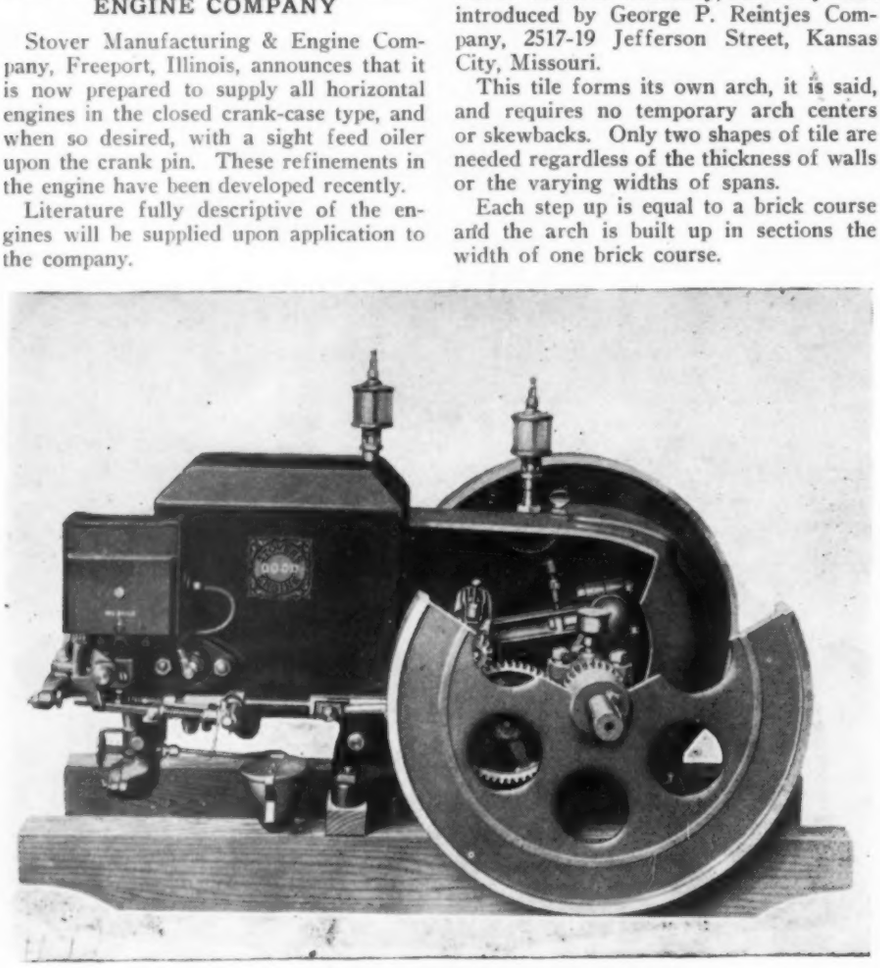
Additional information with literature will be mailed from the company, by request.

New Stover Engine

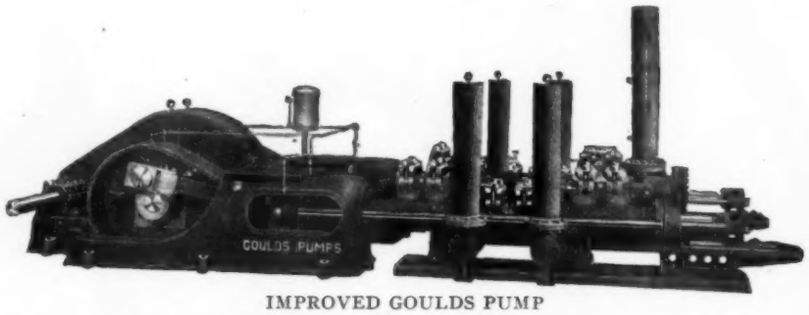
STOVER MANUFACTURING AND ENGINE COMPANY

Stover Manufacturing & Engine Company, Freeport, Illinois, announces that it is now prepared to supply all horizontal engines in the closed crank-case type, and when so desired, with a sight feed oiler upon the crank pin. These refinements in the engine have been developed recently.

Literature fully descriptive of the engines will be supplied upon application to the company.



STOVER CLOSED CRANK-CASE TYPE ENGINE



IMPROVED GOULDS PUMP

Improved Goulds Pumps

GOULDS PUMPS, INC.

Goulds Duplex and Triplex Horizontal Pipe Line Pumps are now being furnished with a new frame for the power end. While there is no radical departure from the types of frame previously used, the new design is heavier and more substantial in appearance. The crosshead guide has been enlarged and the frame designed so that the entire connecting rod, crosshead and plunger assembly can be withdrawn as a unit, a distinct advantage in overhauling.

More information can be secured from Goulds Pumps, Inc., Seneca Falls, New York, or from any of their branch offices.

Flexible Arch Tile

GEORGE P. REINTJES COMPANY

An arch tile, the principal characteristics of which is flexibility, has lately been introduced by George P. Reintjes Company, 2517-19 Jefferson Street, Kansas City, Missouri.

This tile forms its own arch, it is said, and requires no temporary arch centers or skewbacks. Only two shapes of tile are needed regardless of the thickness of walls or the varying widths of spans.

Each step up is equal to a brick course and the arch is built up in sections the width of one brick course.

The tapered key of the Reintjes flexible arch tile facilitates repairs, according to the manufacturers. Replacement arches can be driven to a tight fit without disturbing overhead brickwork. Also the interior section of the arch can be repaired without interfering with the remaining sections.

More information with literature will be provided by the company, on request.

Improved Spark Plug

STITT IGNITION COMPANY

The Stitt Ignition Company, Columbus, Ohio, has developed and is producing a new material for firing wires that operates gas engines, heavy duty trucks and other motorized equipment.

NEW STITT SPARK PLUG

The manufacturer claims that this wire is unusually resistant to high temperatures, sulphur gas and the electric arc produced by high tension magnetos. This enables wire of small diameter to be used in spark plugs, and it is said that small diameter wire prevents preignition and porcelain insulator breakage.

Further information can be had by writing the company, at Columbus.

Straight Pull Clamp

SHEFFIELD STEEL CORPORATION

Sheffield Steel Corporation, Kansas City, Missouri, has developed a new steel clamp called the Sheffield Steel Straight Pull Heavy Duty Combination Safety Clamp.

The manufacturers claim that in the shape of the clamp is its principal merit. The taper of the "U" is narrowed sufficiently to reduce strain to the minimum and the shape of the "U" does not change under pull. With the new clamp the throw-off hook pulls straight with the heads.

Also in the new clamp the shape of the openings in the castings through which the pull rod passes corresponds to the up-set and rod size, and grips at every point.

The clamp is recommended for use on deep wells.

More complete information can be had by writing the manufacturers.

New 'Oilwell' Equipment

OIL WELL SUPPLY COMPANY

The Oil Well Supply Company, 215 Water Street, Pittsburgh, Pennsylvania, has added several items of equipment to its line of oil field supplies within the past 12 months, descriptions of which follow:

"Oilwell" Oil Bath "Mud Hog" Pump

The Oil Bath "Mud Hog" Pump was designed for continuous service.

It can be furnished to operate to 1500 pounds per square inch working pressure as follows—12-inch stroke up to 500 pounds working pressure, 14-inch stroke up to 1000 pounds working pressure, and 18-inch stroke up to 1500 pounds working pressure.

A pulley can be supplied for belt drive or a sprocket for chain drive. For drive by electric motor through gears, the motor is mounted on the bed which has been designed with pads to allow direct bolting of the motor feet.

The crankshaft is made of steel, in halves, insuring perfect tooth contact between pinions and gears. Each crank is driven by a gear and pinion, each pump having two pinions and two crank gears. All gears have machine cut teeth and are flooded with oil while running. Pinion shaft and crankshaft are mounted in Timken taper roller bearings. Between the piston rod stuffing box in the cylinder head and the crosshead space of the bed is a dividing wall and additional packing where the rod passes through this wall effectively seals the main body of the pump, preventing the entrance of foreign matter. Crossheads are steel in all but the smallest size pump and are of the replaceable shoe type, easily adjusted. Connecting rods are forged steel and the brasses on both ends are easily adjusted by means of wedges. Valves and seats are of the tapered type.

The lubrication system is continuous to all working parts. The oil is carried up from the bottom of the crank case to the top of the inside of the pump by the large master gears. From this elevation it gravitates to all working parts through troughs, and then back to the bottom of the crank case. The crank case is provided wih a plug for draining and two pet cocks to gauge the level of the oil.

Though entirely enclosed, all parts are accessible through openings from which the covers are readily removed. Eye bolts are located in the top of these pumps to facilitate lifting and they are so located that each pump will be in perfect balance when being lifted.

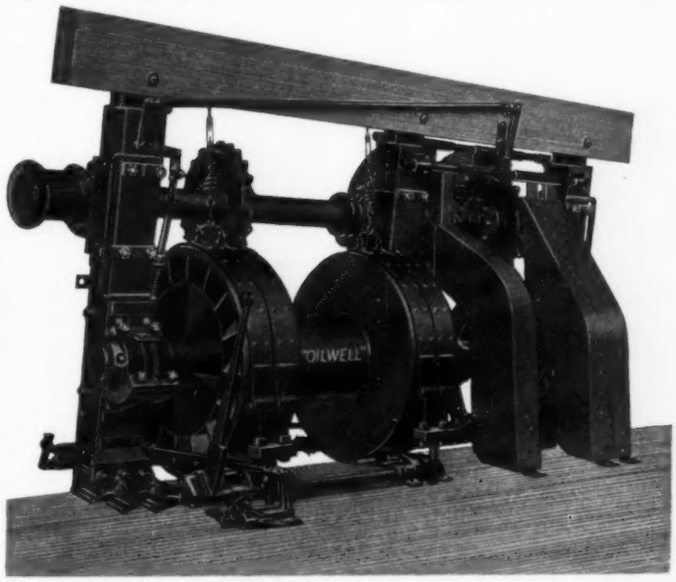
"OILWELL" IMPERIAL ROTARY

Imperial Rotary

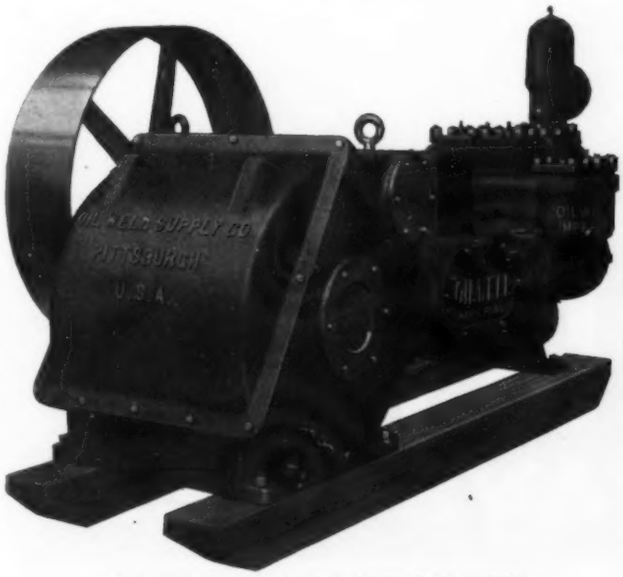
The latest addition to the "Oilwell" line of Make-and-Break Rotaries is the "Oilwell" 26-inch Imperial which is recommended for drilling to any depth.

In this rotary the base proper and the skids are made in one piece, the gears and pinion are forged steel with cut teeth, and the pinion shaft is equipped with Timken roller bearings.

It is constructed so as to permit a 30-inch fish tail bit to be lowered through or pulled out, and has a full diametrical opening of 26 inches. Passage through the rotary for 26-inch to 30-inch fish tail bits is provided by means of two slots in the rotary table, located opposite each other.



"OILWELL" CLASS 353E HOIST OR DRAW WORKS



"OILWELL" OIL BATH MUD HOG PUMP

"Oilwell" Class 353-E Hoist or Draw Works

Many new features are embodied in the "Oilwell" Class 353-E Hoist or Draw Works which is designed and constructed for three-speed operation under heaviest drilling service.

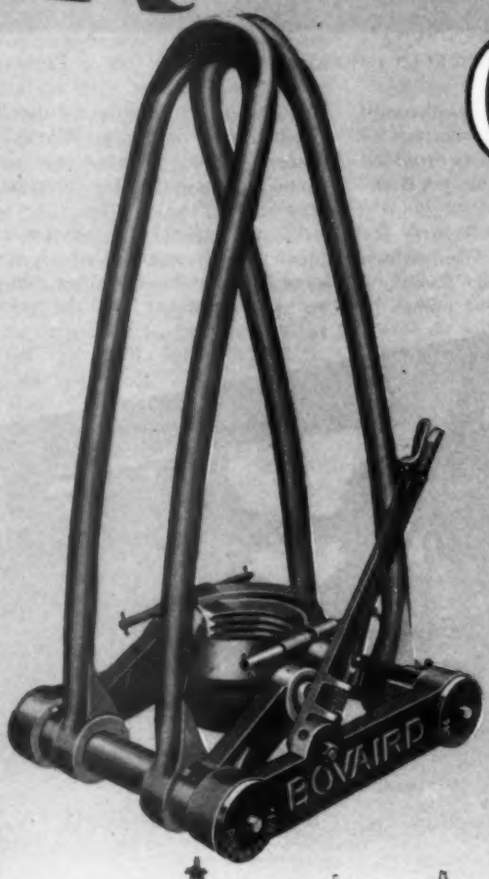
All speed sprocket drives are located between the two uprights which are farthest from the operator's position, thus protecting the operator from the possibility of injury. This concentration of the entire driving power of the shaft in one place also results in correct balance of the space between the uprights, increased shaft strength and the equalization of shaft loads.

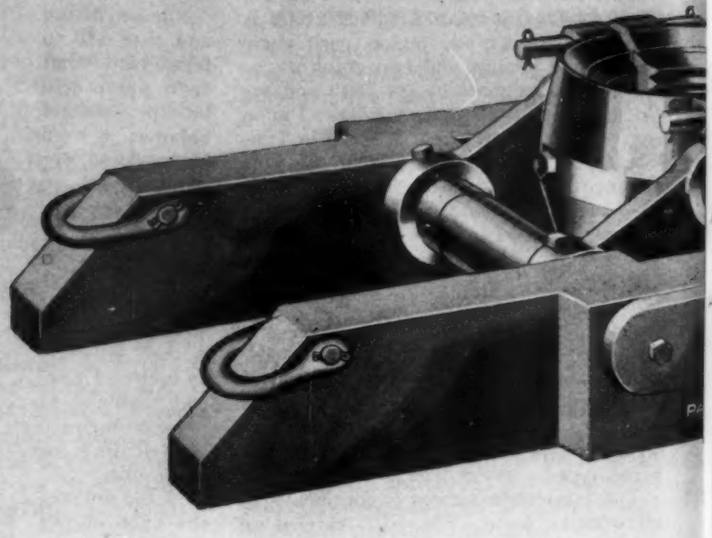
The brakes are air-cooled, the brake flanges being separate units especially designed with self-contained fans. These fans bring a constant equal amount of air into contact with all heat dissipating parts of the flanges, and the circulation of air is proportional to the speed of the hoist.

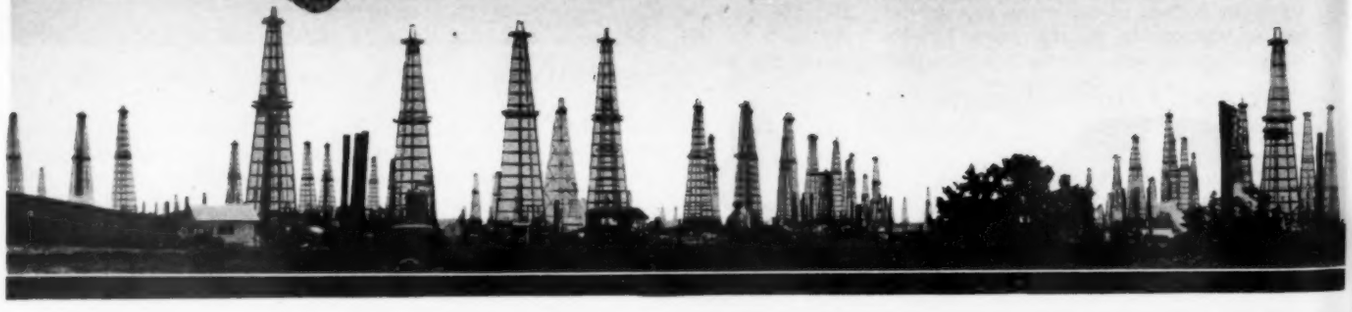
Four heavy duty brake bands, two on each flange, provide braking power, and each set of two bands is equalized to give uniform pressure and wear on the linings. The two sets of bands are also equalized through a heavy duty safety type equalizer. Each brake band can be adjusted individually.

The drum spool is of cast steel in one piece. The flange members are trussed

Running— And Pu







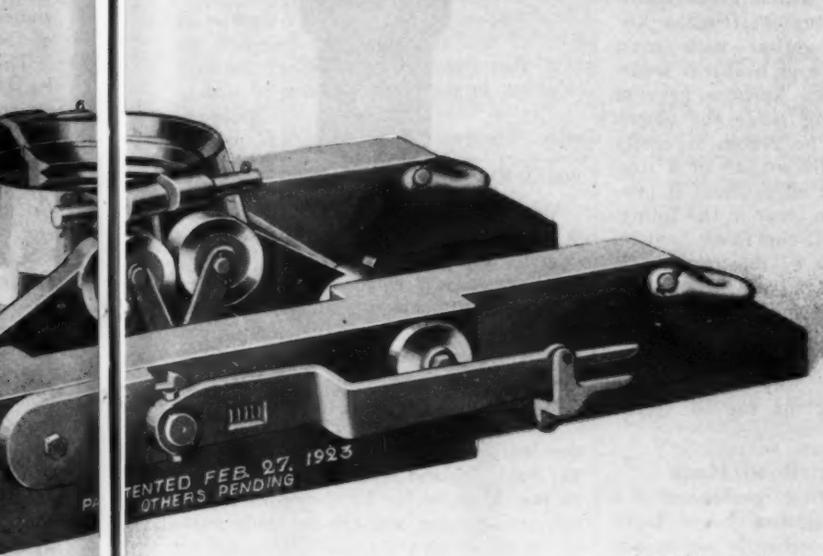
BOVAIRD Grip

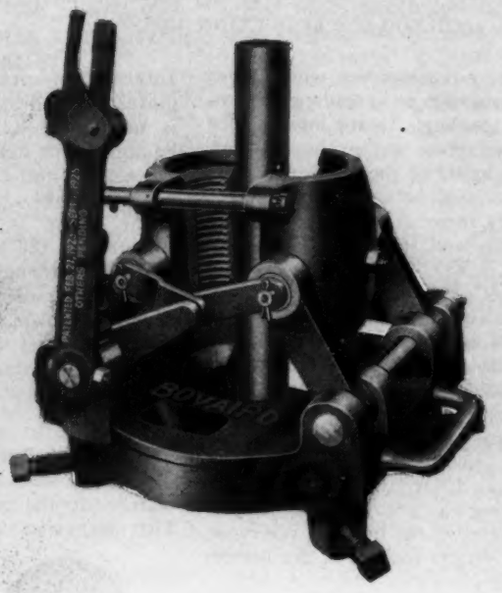
SUPPLY BOVAIRD COMPANY

ALWAYS MEET

Say you saw it in The OIL WEEKLY

lling Insurance
for CASING and TUBING

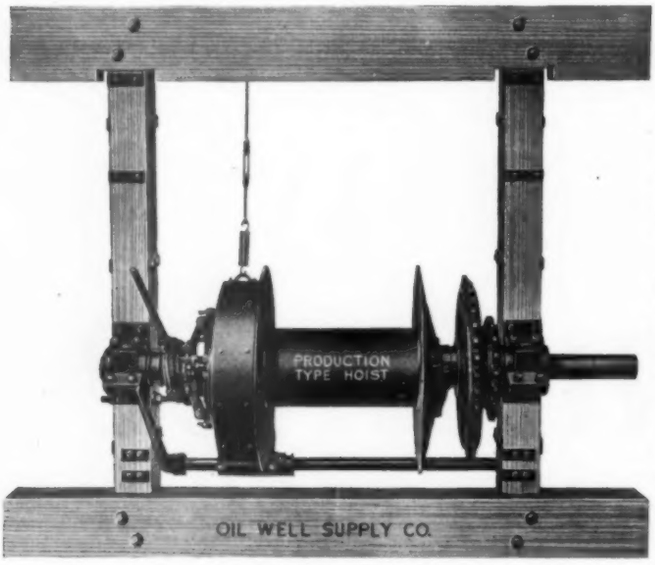




ELEVATORS AND SPIDERS
THIS STANDARD

SUPPLY BOVAIRD COMPANY

Say you saw it in The OIL WEEKLY



"OILWELL" PRODUCTION HOIST

for the entire circumference which gives maximum resistance to spreading stresses produced by spooling. Heavy internal ribs give ample resistance to crushing stresses. The drum is keyed to the shaft and independently mounted between the bearings which permits removal of the drum from the shaft at the well, if desired. The spooling capacity is 9500 feet of five-eighths-inch, 6500 feet of three-fourths-inch, 4000 feet of seven-eighths-inch or 3000 feet of one-inch wire line.

Both the drum shaft and the countershaft are made of heat treated steel.

Both shafts are mounted in heavy duty, high speed bearings provided with replaceable bronze sleeves. All bearings are double ring oiled. A large oversize cover in each bearing cap provides easy inspection and refilling of the large oil reservoir, and a drain plug is located in the bottom of each bearing.

The uprights are of steel and the backs of bearings are machined to fit tightly against them. Heavy welded cleats prevent shifting or creeping of the bearings.

Sheet metal guards enclose all drives, front and rear, and may be easily removed for lubrication or inspection purposes.

"Oilwell" Production Hoist

The production or tubing hoist combines advanced engineering ideas in design and construction.

It is recommended for all kinds of maintenance service on any type of well and is chain driven from the calf wheel or from any type of reduction gear.

The drum, with a spooling capacity of 3500 feet of seven-eighths-inch wire line, is mounted on heavy Timken roller bearings which assure transmission of maximum power. The Timken roller bearings are grease lubricated by the Alemite system and require attention only at long intervals. They can be adjusted from the outside and at one end of the drum.

The shaft is of hot rolled steel, full floating, and is mounted in two heavy bearings which are set into the uprights and securely bolted to them. These bearings are heavy castings, babbitted and ring oiled. Provision is made in the cap and base of each bearing for convenient filling and draining of the deep reservoir.

The clutch is a multiple disc dry plate friction type and operates with exceptional smoothness which eliminates physical strain on the operator. The plates are large in diameter and constructed of material which gives maximum friction together with long and uniform wear. Internal compression springs prevent plates from dragging when the clutch is not engaged. The clutch is easily engaged and held by means of a toggle action, and easy adjustment is provided for take-up on wear in the lining.

The brake is self-contained and is mounted on the back of the upright. It consists of a single band which is adjustable and the standard shaft type of operating mechanism.

All sprockets are cast steel and are keyed to the shaft. Any desired speed may be obtained by the use of special sprockets.

Safety Sucker Rood Hook

An automatic locking mechanism is a feature of the safety sucker rod hook. The mechanism is positive in action and cannot open until released by hand pressure on the latch.

"OILWELL" SAFETY SUCKER ROD HOOK

The safety latch is raised up into the body when engaging or disengaging the hook, thereby eliminating the possibility of its catching on the elevator bail.

The handle placed on the back of the hook provides the operator with a good gripping device for handling and operating the hook.

Weight of the hook is 27 pounds, and the load capacity 10,000 pounds.

Imperial Stuffing Box

The Model "C" Stuffing Box is designed to permit pulling sucker rods and valves (as well as running a sucker rod socket) directly through the box without removing the stuffing box from the tubing.

"OILWELL' IMPERIAL STUFFING BOX

When sucker rods are to be pulled, it is only necessary to turn the packing head to the left until the tension on the rubber packing rings is relieved. Then the oil reservoir automatically unlocks and permits the withdrawing of the packing parts of the box on the polish rod. Any tool that will pass through the tubing will pass freely through the stuffing box.

The oil reservoir holds approximately one-half pint of grease or oil, and the upper babbitt gland is detachably connected to the oil reservoir by means of a dovetail arrangement and can be easily moved up on the polish rod to add additional rubber packing rings to the box.

The top of the stuffing box is flat offering a solid seat for the elevators when pulling sucker rods.

Portable Tubing Spider With Lifting Device

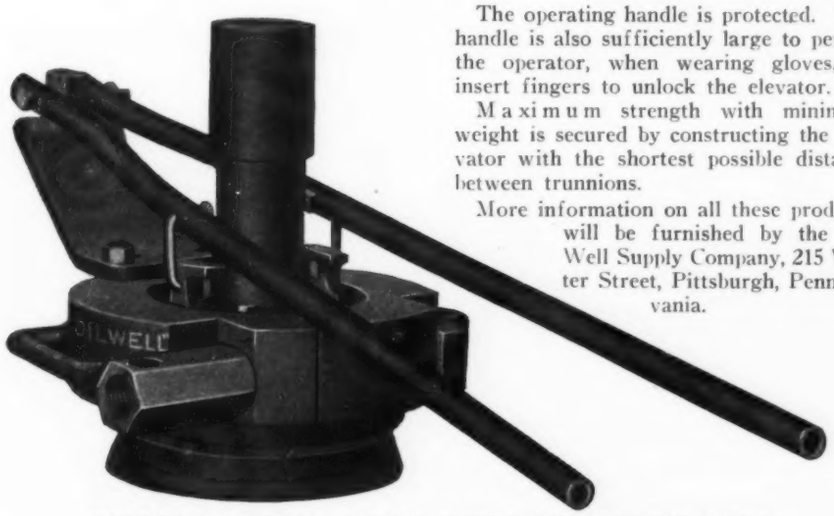
The "Oilwell" portable tubing spider is designed to meet all field conditions incident to the handling of long strings of tubing.

The spider is made of steel, in two sections, and is so arranged that it can be placed around the tubing and securely fastened in the casing head. The spider will fit into a six and five-eighths-inch casing head, but when used in a five and three-sixteenths-inch or eight and one-fourth inch casing head an attachment must be used.

The spider will accommodate slips for two-inch or two and one-half-inch tubing. The gripping area of the slips is ample and evenly distributed over four separate slip segments, eliminating the danger of swagging the tubing.

When using the "Oilwell" Portable Tubing Spider for pulling tubing, only one pair of tongs is necessary as the slips in the spider serve as a pair of tongs.

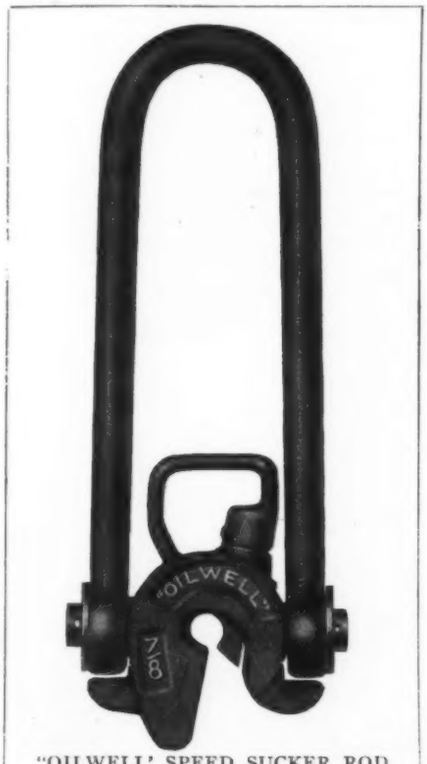
The lifting device for handling the slips is held in position on the spider by means



"OILWELL" PORTABLE TUBING SPIDER WITH LIFTING DEVICE

of a steel bracket and cap screws, and is so designed that the slips can be lifted free of the spider or raised only sufficiently to permit the passage of the tubing coupling.

This lifting device is removable, which permits the use of the spider and slips for a tubing hanger or support.



"OILWELL" SPEED SUCKER ROD ELEVATOR

"Oilwell" Speed Sucker Rod Elevators

The "Oilwell" Speed Sucker Rod elevator is recommended as an item of new equipment with several advantageous features.

The body is made in one piece, and is of heat treated steel, hardened. The body is also reversible.

Bail supports are made a part of the body.

The locking pin is of the plunger type and is self-cleaning.

The operating handle is protected. The handle is also sufficiently large to permit the operator, when wearing gloves, to insert fingers to unlock the elevator.

Maximum strength with minimum weight is secured by constructing the elevator with the shortest possible distance between trunnions.

More information on all these products will be furnished by the Oil Well Supply Company, 215 Water Street, Pittsburgh, Pennsylvania.

Case Industrial Tractor

J. I. CASE THRESHING MACHINE COMPANY

The J. I. Case Threshing Machine Company, Inc., Racine, Wisconsin, has developed an industrial tractor which is extremely applicable to oil field service.

The short wheelbase and narrow width of the tractor make it adaptable for work in tight places. The outfit is low enough to have stability on steep slopes, and also to have free movement under low, overhanging obstructions.

A turning radius of 10 feet adds to the compactness of the unit.

The tractor has a rated power of 12 horsepower at the drawbar and 20 horsepower at the belt. Equipped with a belt pulley regularly, it is ready for any drawbar or belt job within its power range.

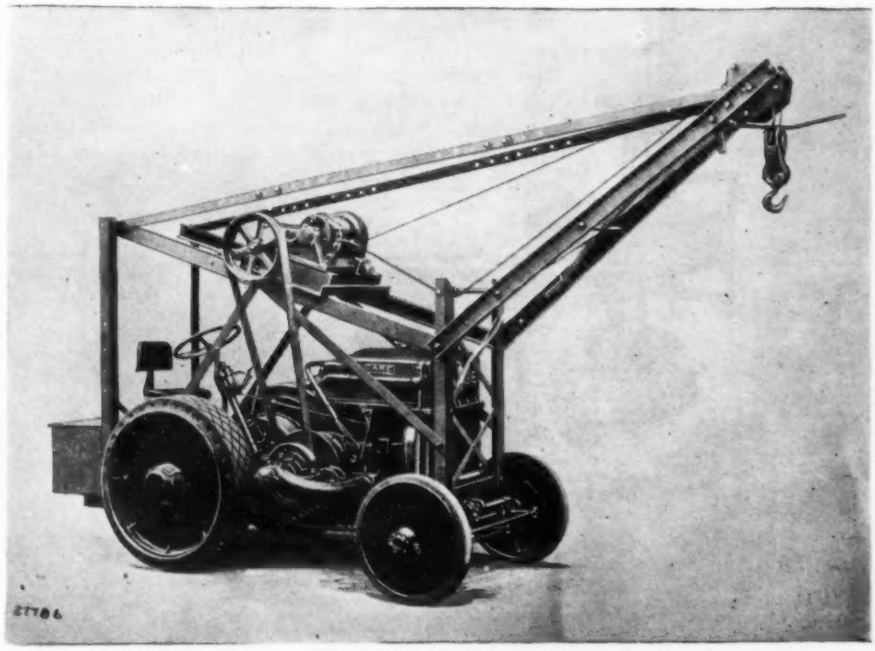
A quick-acting throttling governor regulates the speed of the engine quickly to meet variations in load.

The weight of the tractor is distributed so that about two-thirds falls on the rear wheels.

A special steering gear makes the front wheels quickly and smoothly responsive.

The seat is spring mounted to take up shocks. The operator sits in a position which gives him a clear view all around the tractor as well as straight ahead.

Further details and specifications will be provided by the company, on request.



CASE INDUSTRIAL TRACTOR

Barco Locking Device

BARCO MANUFACTURING COMPANY

The Barco Manufacturing Company has added to its line a locking device to be used on its lubricated plug valves, particularly those used in gasoline lines or in other services where it is desired to not only lock the valve and prevent it being operated, but to also prevent the valve from being taken apart and gasoline or other fluids removed by any unauthorized person.

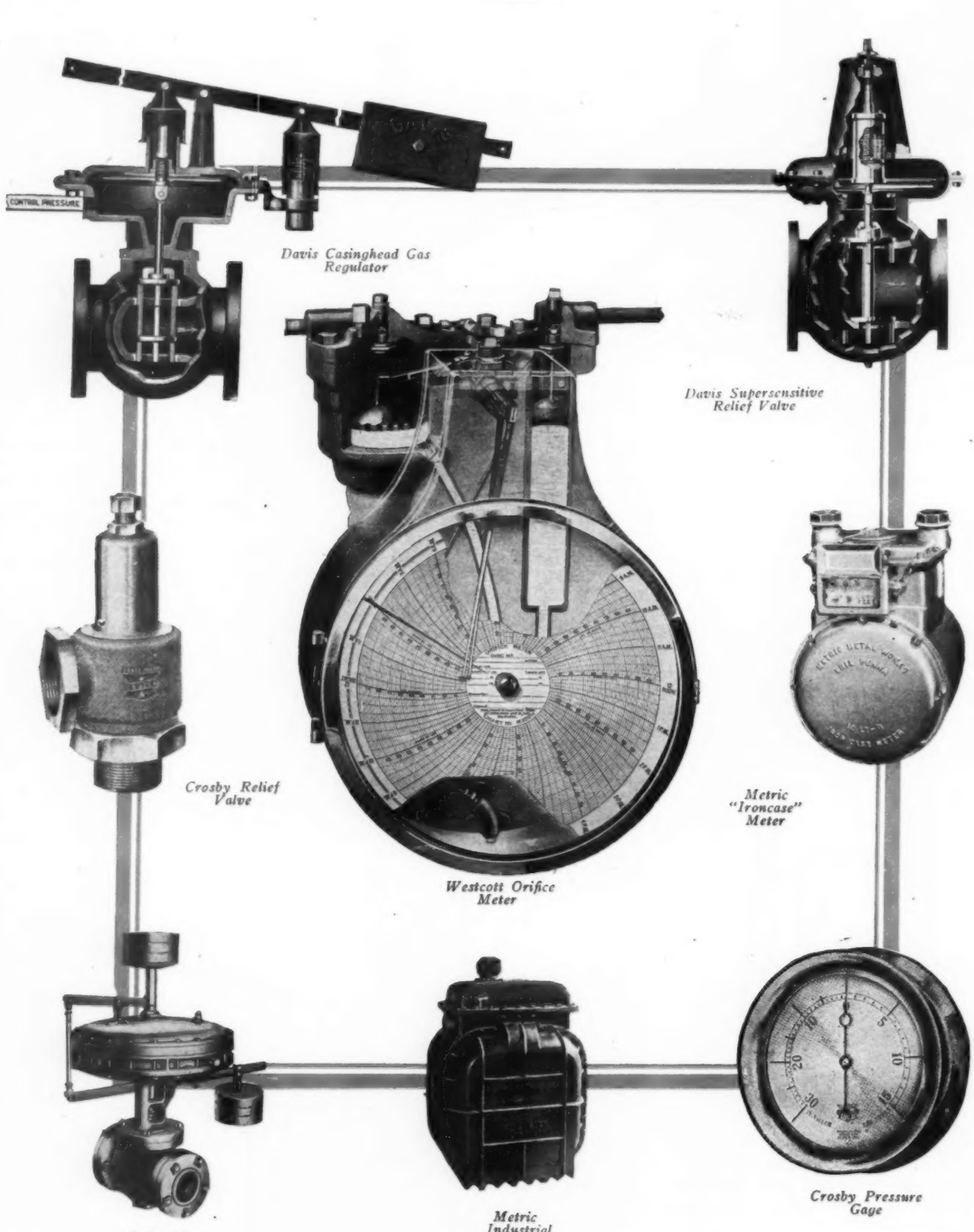
This locking device when not in use lies on the pipe and cannot be lost without first removing the valve or it will stay on the valve if this is desired.

When it is desired to lock the valve, the handle is removed and the top part swung down over the shank after which a padlock is inserted.

The bottom section fits the hexagon cap on the bottom of the valve, preventing this cap from being removed.

More information can be had on application to the Barco Manufacturing Company, 1801 Winnemac Avenue, Chicago.

WESTCOTT & GREIS INC.
W&G
MEASUREMENT & CONTROL



Davis Casinghead Gas Regulator

Davis Supersensitive Relief Valve

Crosby Relief Valve

Westcott Orifice Meter

Metric "Ironcase" Meter

Fulton Gas Governor

Metric Industrial Meter

Crosby Pressure Gage

WESTCOTT & GREIS INC.
W&G
MEASUREMENT & CONTROL

Say you saw it in The OIL WEEKLY

WESTCOTT & GREIS INC. W&G MEASUREMENT & CONTROL

REGULATORS

Throughout the history of man one factor has stood pre-eminent in deciding between success and failure. That factor has been REGULATION. For our first lesson in the value of regulation we may even go back to Adam himself. Had he known how to regulate his diet and ribs a great catastrophe would never have occurred. Improper regulation caused the downfall of Egypt, Tyre, Greece, Macedonia, Rome. The most wonderful machine known is the human body, the regulating force of which is the brain. Improper brain function causes disaster to all parts of the body.

The same is true of mechanical regulation. If the regulator, or the brain of the distributing system, ceases to function properly, it causes chaos and disorder; and it would be just as logical to remove the brains of the *management* as to attempt to operate the gas industry with imperfect gas regulation.

The regulator is the watch dog protecting the interests of both company and consumer. It provides the customer with steady gas pressure. It reduces leakage. It makes possible cordial feeling between company and public.

The human regulation of all large enterprises is generally in the hands of men of proven ability, who have been selected after long and careful thought. The same care should be given to the selection of a mechanical regulator, and even more, for it must function properly 24 hours in the day, 365 days in the year.

WESTCOTT & GREIS, as headquarters for gas regulators, expect to be constantly obliged to meet more exacting conditions —to produce regulators that are "fool-proof" and which will function day after day, year after year, in such a manner that the duties of all the regulating bodies, from the Railroad Commission to the man who tamps the ditch, will be lightened, and their positions will be pleasant, happy and profitable, due solely to *proper regulation.*

WESTCOTT & GREIS *engineers are specialists on regulators and regulator problems, and are at your service.*

WESTCOTT & GREIS, INC.

DALLAS TULSA LOS ANGELES

WESTCOTT & GREIS INC. W&G MEASUREMENT & CONTROL

Say you saw it in The OIL WEEKLY

New Marion Products

MARION MACHINE, FOUNDRY AND SUPPLY COMPANY

Marion Machine, Foundry and Supply Company, Marion, Indiana, announces a number of new products which have been developed during the past year.

MARION SUCKER ROD HOOK

Sucker Rod Hook

The Marion sucker rod hook has a ball bearing swivel and is made in three sizes: 5,000 pounds capacity, 7,000 pounds, and 12,500 pounds.

Adjustable Swings

The Marion 180-degree swing adjusts from 180 degrees to nearly 90 degrees. All parts subject to wear have oil reservoirs.

The 90 degree swing adjusts from 90 degrees to 45.

Mitchell-Loucks Steel Pitman

In the Mitchell-Loucks steel pitman, the box is split and the lower half is made of cast steel with two large trunnion pins that rest in holes in the steel yoke which forms the lower end of the pitman.

The bearing is lined with babbit and is provided with a heavy compression grease cup screwed into one of the trunions.

The cap is made of semi-steel, babbitted and attached with a ball joint to the connecting rod.

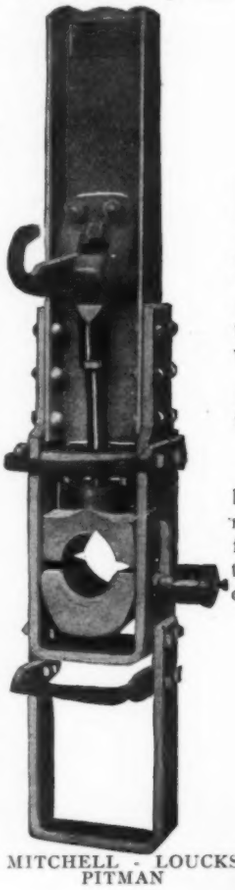
The connecting rod has a screw adjustment for length and is attached so proper bearing can be put on the wrist pin.

The eccentric lever is a steel block. When in the down position the cap is locked on the pin. When raised to the upper position, the cap lifts about three-fourths of an inch, permitting the pitman to swing off the wrist pin freely.

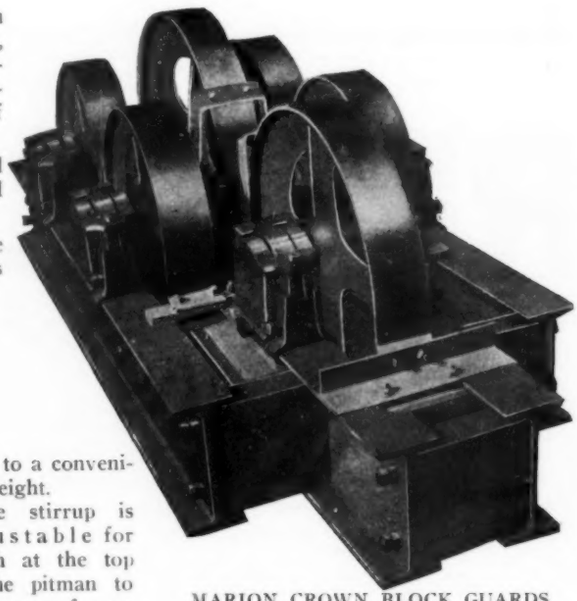
Two handles are provided for lifting the pitman on and off.

The foot attached to the bottom of the pitman keeps it up to a convenient height.

The stirrup is adjustable for length at the top of the pitman to take care of any variation in rigs.



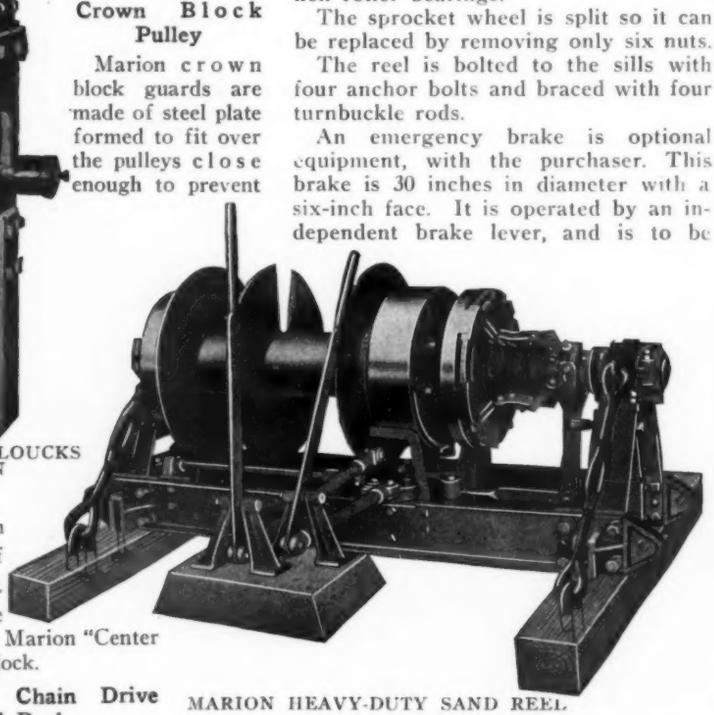
MITCHELL - LOUCKS PITMAN



MARION CROWN BLOCK GUARDS

Guards for Crown Block Pulley

Marion crown block guards are made of steel plate formed to fit over the pulleys close enough to prevent the lines from jumping out of the groove. Guards are made to fit any Marion "Center Pull" crown block.



MARION HEAVY-DUTY SAND REEL

Heavy Duty Chain Drive Sand Reel

The sand reel is self contained, mounted on a steel frame.

The drive sprocket wheels are keyed to the crank shaft.

The reel is driven by two-inch pitch high-speed, hardened-steel roller chains.

The outfit is equipped with a service brake, 30 inches in diameter by eight-inch face.

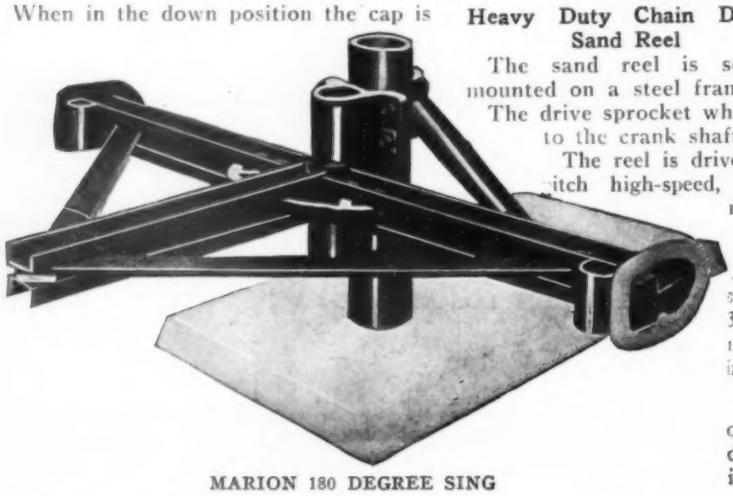
The clutch is of the double-disc type, 26 inches in diameter, with asbestos lined discs.

The clutch arm is mounted on Timken roller bearings.

The sprocket wheel is split so it can be replaced by removing only six nuts.

The reel is bolted to the sills with four anchor bolts and braced with four turnbuckle rods.

An emergency brake is optional equipment, with the purchaser. This brake is 30 inches in diameter with a six-inch face. It is operated by an independent brake lever, and is to be used in case the service brake should fail or to alternate with the service brake in deep holes.



MARION 180 DEGREE SING

Mariondyer Speed Spool

The Mariondyer bull wheel speed attachment consists of a two diameter drum that is attached to the bull wheel shaft to increase the diameter of the shaft to approximately one and one-half and two times the shaft diameter. Its purpose is to speed up the pulling of tubing and rods. The two halves are hinged together on one side and are handled by means of a chain that automatically opens the two halves so they will drop over the shaft readily.

More information can be had from the company, on request.

Boiler Feed Regulator

ATLAS VALVE COMPANY

Atlas Valve Company, 282 S. Street, Newark, New Jersey, is now marketing through distributors, the Campbell boiler feed water regulator.

The regulator consists of a diaphragm operated control valve installed in the feed water line, and a regulating element installed in the water column, that delivers to the diaphragm of the control valve a pressure that gradually increases as the water level in the colum increases beyond a predetermined level, thereby gradually closing the control valve which reduces the water input to the boilers. As the water falls below the predetermined level, the pressure delivered by the regulator to the control valve decreases and permits the valve to open and speed up the water input.

Pressure employed to operate the control valve is taken directly from the water column and is delivered to the regulator through a small pipe slotted in the end.

Fluctuating feed water pressure does not affect the control valve inasmuch as the area of the control valve diaphragm is greater than the area of the valve seat. This causes the pressure on the diaphragm delivered by the regulator to have more than twice the power required to close the valve tight against excess feed water pressure up to 100 pounds.

When the feed water input exceeds the demand, the water level rises. As the water in the column rises in the pipe that supplies the regulator, a small portion of it spurts up into the pipe and mingles with the steam entering through the slots. When the water in this steam enters the regulator, it evaporates and increases the pressure on the control valve diaphragm, causing the valve to gradually close and reduce the water input to the boiler.

When the demand exceeds the water input the water level in the column lowers. Steam entering the regulator then becomes dryer. Consequently the pressure delivered to the control valve will become less and the valve will open wider and speed up the water input.

More detailed information will be supplied by request to the company, or to George B. Allen & Company, 301-2 Simpson Building, Dallas, Texas.

BEEBE ALL-STEEL HAND HOIST

All-Steel Hand Hoist

BEEBE BROTHERS

Beebe Brothers, Seattle, Washington, are now marketing the B. B. Brothers All Steel Hand Hoist, through the National Supply Companies.

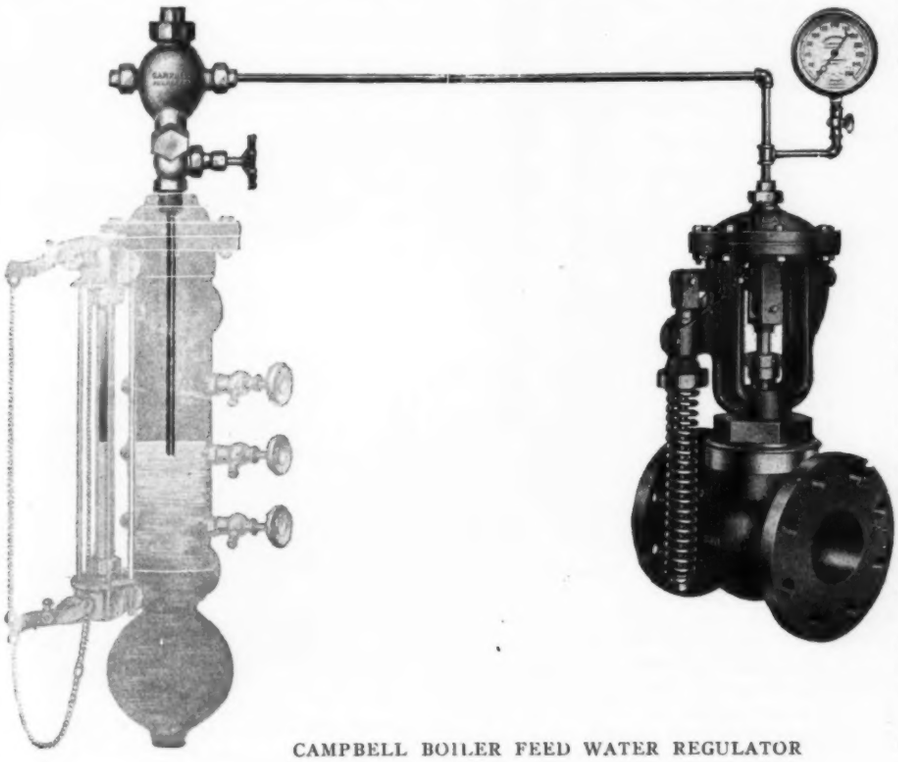
The hoist is recommended as a general utility hoist. It has two quickly shifted main speeds and instantly adjustable handle, giving a maximum range of speed and power to conform to various loads. The brake has positive cam action, and there is a spring operated safety dog equipped with positive lock-out lug. The hoist can be bolted anywhere and operates in any position, and is thus suitable for all purposes where a heavy lift or pull is needed by hand power. It also meets the requirements for the many out-of-the-way, or intermittent lifts or pulls where power is not practical or available.

The internal gear and extended drum shafts are made as part of the drum.

The crank pinion and shaft are one piece of steel, attached to a steel handle, adjustable from 12 inches to 18 inches in length.

For heavy truck work special all-steel truck attachment plates and pin allow the hoist to be turned and locked at an angle, swung over in front of the truck body when not in use or quickly removed.

Additional information will be supplied upon request to the company.



CAMPBELL BOILER FEED WATER REGULATOR

Phomene Accumulator

PYRENE MANUFACTURING COMPANY

The Pyrene Manufacturing Company, Newark, New Jersey, announces the Phomene Accumulator, described as a new automatic foam fire protection apparatus.

The accumulator is compact. A water line connection is made at the bottom and a foam distributing line is run to the hazards. In the accumulator is placed a charge of dry powder. It is then ready to deliver foam whenever the valve in the water line is opened either automatically or manually. The outfit is operated by a thermostatic device located at the hazard.

The accumulator contains 275 pounds of powder and delivers 2400 gallons of foam at average water pressure and temperature.

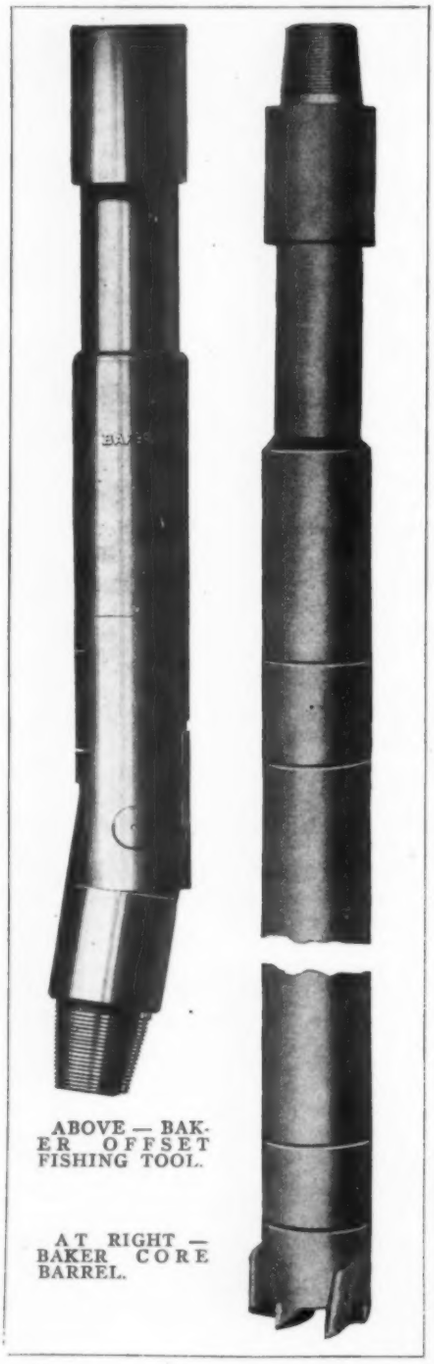
More information will be mailed by the company, on request.

New Baker Products

BAKER CASING SHOE COMPANY

Baker Casing Shoe Company, Huntington Park, California, has applied for patents on a new type core barrel.

The assembly comprises a rotary core barrel carrying a floating inner core retaining tube which does not rotate with the outer core bit. The core bit has two series of three teeth, each disposed on concentric circles of different diameters. The outer diameter corresponds to the size of the hole it is desired to drill, and the inner diameter corresponds to the size of the core. Ingenious provision is made for free circulation between the inner and outer barrels emerging between the core bit teeth.



ABOVE — BAKER OFFSET FISHING TOOL.

AT RIGHT — BAKER CORE BARREL.

The stationary core retaining tube provides a means for determining the direction of dips in formations where a cutting tooth on the inside of the tube is used to mark the core, and a direction instrument is used.

These specially designed cutting teeth, while in two series, co-operate in cutting the ring of the formation that is cut around the core.

Lubrication is provided at the cutting edges by the circulation.

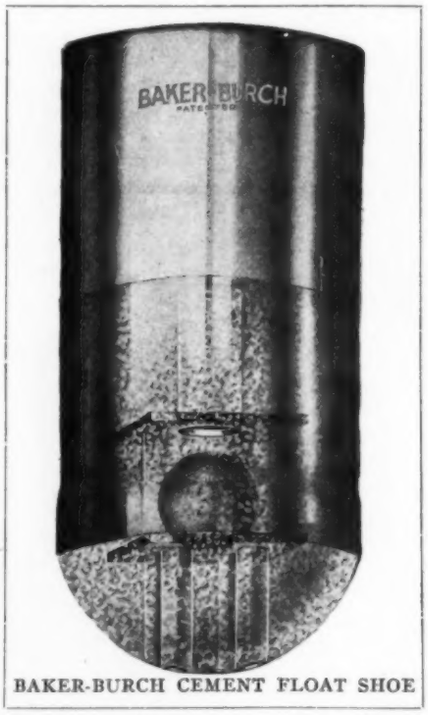
The split trap ring is tapered to conform with the taper on the inside of the sharp core trimmer shoe, and is limited in its compressibility, while being expansible to allow for the entrance of the core. Its inner surface is corrugated, and curved spring steel fingers are provided, making a trap ring that will retain every kind of formation.

Baker-Burch Cement Float Shoe

The Baker-Burch Cement float shoe is a Baker development for floating in long and heavy strings. The valve seat as well as the lower valve stop are composed of tough material. A two-inch hole leads into the valve chamber through the valve seat and four smaller holes lead out of the valve chamber through the valve stop. The composition ball will float in water, insuring its seating, both while floating casing in the well and after the cementing operation.

Offset Fishing Tool Connection

The Baker offset fishing tool connection operates on the hydraulic principle which throws the offset member off center. The offset connection attaches to the top of the fishing tool, being fitted with a tool joint pin on the bottom, and a tool joint box on the top. The offset connection with fishing tool attached is lowered in the well the same as any other fishing too and when a predetermined depth is reached, where the fish should be, and a connection not made, the circulation pump is started, which automatically causes the fishing tool to be thrown off center.

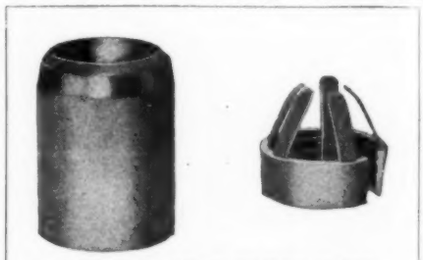


BAKER-BURCH CEMENT FLOAT SHOE

Maximum radius provided is on a ratio of three and one-half inches to the foot.

Baker and McClaine Float Plug

Combining the Baker and McLlaine patents has resulted in the development of the Baker-McLaine Float Plug Combination, in both the screw and slip types, consisting of a shoe guide, a back pressure valve, and a Baker plain casing shoe. This combination guides the casing past any irregularities in the well.



BAKER-McLAINE FLOAT PLUG

Baker Standard Core Barrel

Simplicity characterizes the new Baker Standard core barrel. As originally designed, ample clearance was allowed at the top of the core tube so that any tendency to batter would not freeze the barrels.

The barrel has a record of securing a two-foot core in an extremely hard formation at a depth of 3800 feet.

Further particulars on all these Baker items may be secured by writing the company, direct.

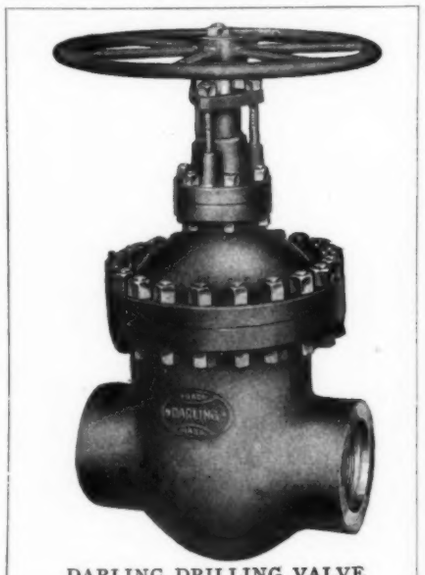
Darling Drilling Valve

DARLING VALVE AND MANUFACTURING COMPANY

Darling Valve and Manufacturing Company, Williamsport, Pennsylvania, announces a new forged steel drilling gate valve.

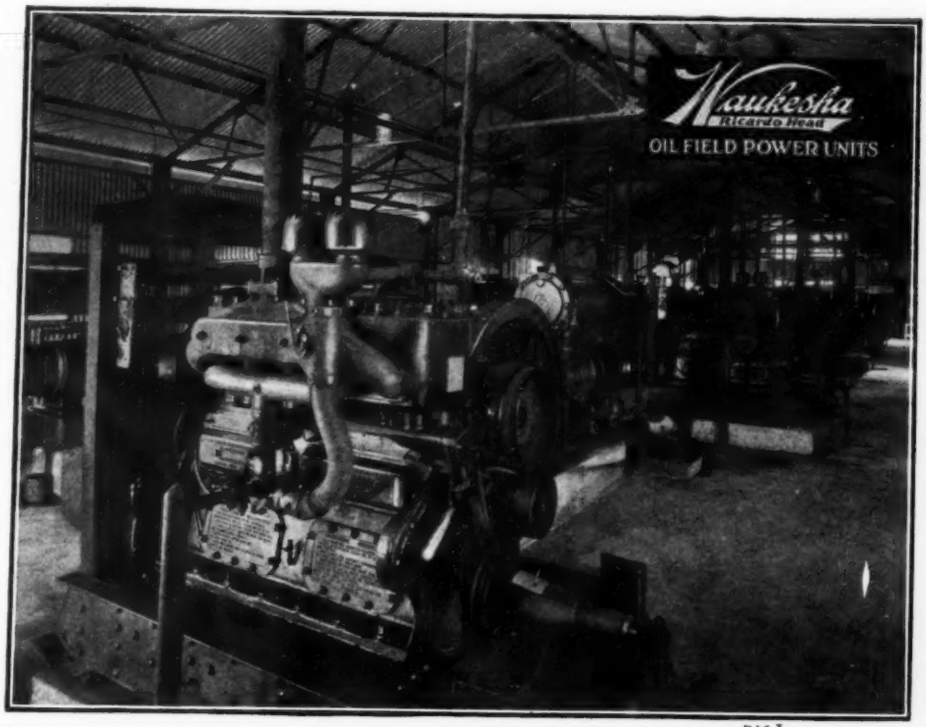
The valve is built for working pressures up to 3000 pounds and is furnished in inside screw, stationary stem type, in screwed ends, flanged ends, and flanged ends with companion flanges bolted on.

Additional information will be supplied upon request to the company.



DARLING DRILLING VALVE

Typical Waukesha Powered Air Lift Plant at Bowlegs, Okla.



p-746-L

Where Waste Gas Is Available

Waukesha "Ricardo Head" Oil Field Power Units utilize "waste gas" most economically. They will operate on a gas supply that would not run either a single cylinder gas engine or a steamplant. That is why Waukesha engines are found hard at it driving compressor plants, pumping oil and water, and on both Rotary and Cable Tool Drilling Rigs. Their low cost of installation, rugged reliability and small upkeep expense have made them the standard of gas or gasoline power among the biggest producers.

Waukesha Engines are built in sizes from 20 to 120 Horsepower and may be obtained either as complete weather-proofed Oil Field Units or as Stationary Power Plants for indoor installations such as shown above. The latter are furnished with or without cooling radiators. Write for the new Oil Field Bulletin No. 629-B which is just off the press.

P-787-L

OIL INDUSTRY EQUIPMENT DIVISION

WAUKESHA MOTOR COMPANY

Waukesha Wisconsin

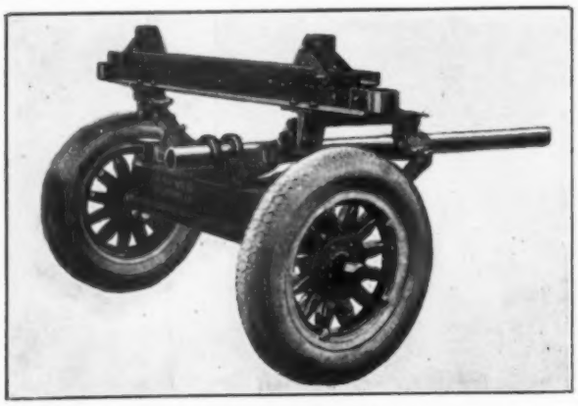
New York — 8 W. 40th St.
Tulsa — C. F. Camp Co.
Houston — Portable Rotary Rig Co.
San Francisco — C. A. Walls

Exclusive Builders of Heavy Duty Gasoline Engines for Over Twenty Years

Improved Trailer

H. B. MAY MANUFACTURING COMPANY, INC.

The May improved spring trailer is a recent addition to the trailers built by H. B. May Manufacturing Company, Inc., Shreveport, Louisiana. This trailer is especially adapted to oil field use.



MAY IMPROVED TRAILER

Construction permits a bumper with which the steel perch casting on the bolster comes in contact when the trailer strikes a bad place in the road. This prevents the springs from going beyond the allowable limit, and the clearance is such that the tires are always protected.

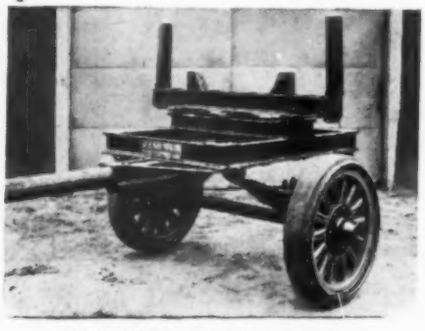
The load is supported at the wheels and not all the way across on the axle.

Two types of hitches are adaptable to this trailer: The regular hitch has the frame work for the support of the front bolster fastened directly to the frame of the truck. This frame work supports a steel center casting in which works another center casting riveted to the bolster. The frame work is so constructed as to allow maximum bearing surface. The coupling pole is fastened to the front bolster with a pivot joint which permits full freedom of vertical movement. The pole is bent so as to allow the wheels to cut under.

Another type of hitch is the combination hitch. This hitch is used where the trailer is to be used for part time only. The bolster is placed on the regular truck body and the coupling pole fastened to the end of the truck frame. Both are easily detached and the truck can then be used in the regular manner.

Special Purpose Trailers

The H. B. May Manufacturing Company is prepared to manufacture special purpose trailers to fill particular needs. These can be made to order.



MAY HEAVY-DUTY TRAILER

Heavy Duty Trailers

Heavy duty trailers with capacities up to 10 tons are now being marketed by the H. B. May Manufacturing Company. These trailers are of the conventional side spring design. Springs are fastened at one end, but the other is free to slide in a housing. On the heavier trailer two sets of these springs are used on each side.

Two types of bolsters are used on the rear: The regular type is rigid, but the other is pivoted at the center so that the bolster on the trailer may turn with the load.

Further information on all these items can be had upon application to the company.

MAY SPECIAL PURPOSE TRAILER

Oil Field Cements

GROVE LIME AND PORTLAND CEMENT COMPANY

A cement especially prepared for cementing oil wells has recently been placed on the market by the Ash Grove Lime and Portland Cement Company of Kansas City.

Oilmax is a cement to be used with water only and when used in this way will show a 28-day strength in 24 hours, allowing drilling operations to be resumed in 48 hours.

Oilmax is not a quick setting cement, according to the workers. It does not take its initial set any sooner than ordinary cement, allowing plenty of time for pouring and other operations before its original set. In fact it can be handled in exactly the same manner as regular cement except that it must be used neat.

Tests have shown that Oilmax sets-up normally in salt water, oil water or water containing sodium chloride, magnesium chloride or calcium sulphate making it unusually desirable for oil well use.

Quickard is another specially processed and compounded cement developed by the same company.

Quickard Cement can be used for rapid construction where time is an essential factor—with the assurance that properly-made Quickard concrete will be as strong in one day as standard specifications require. It binds with old or new Portland cement concrete and can be profitably used in engine and machine bases, foundations, beams, girders, arches, columns, ramps, bridges, sewage, water system replacements, driveways, floors, pavements, etc.

More information will be supplied by the company, on both products, if desired.

Oil and Gas Separator

M. & V. TANK COMPANY

The M. & V. Tank Company, Wichita Falls, Texas, has added to its line of oil and gas separators a new and improved separator for use where oil production is accompanied by heavy gas pressure.

Oil and gas are separated through the use of a series of heavy baffle plates.

The gas pressure is stepped down in such a manner as is said to cut spray to the minimum.

The separator is equipped with Davis valves.

The separator is recommended for use where wells are making up to 10,000 barrels of fluid and 25,000,000 feet of gas.

More information with blue prints and specifications will be sent upon request to the company.

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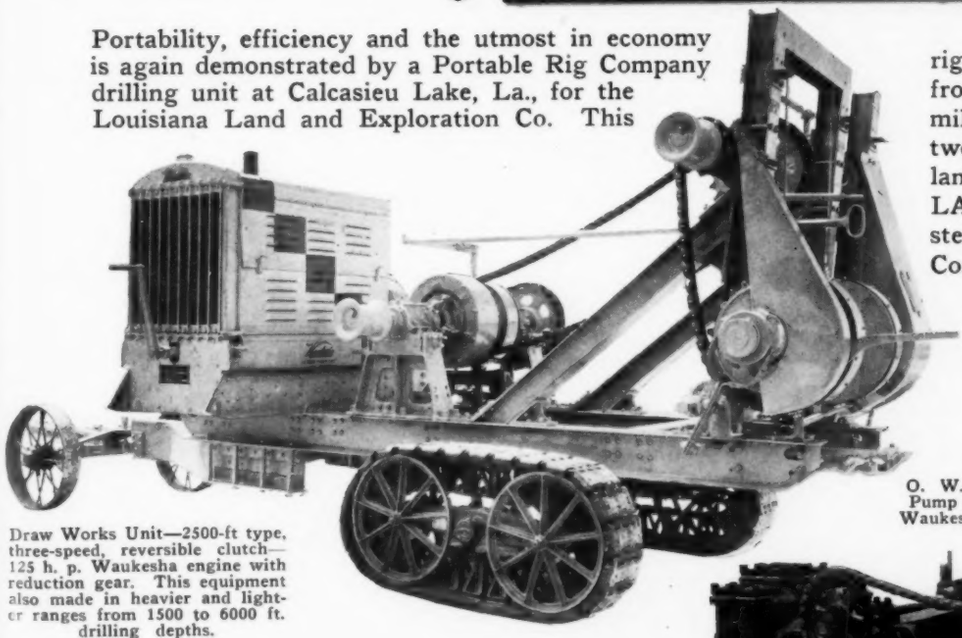
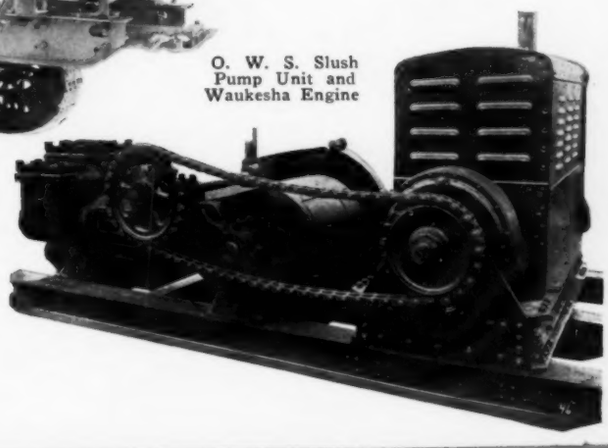
40 Miles from a Railroad

Proving Portability~

Portability, efficiency and the utmost in economy is again demonstrated by a Portable Rig Company drilling unit at Calcasieu Lake, La., for the Louisiana Land and Exploration Co. This rig is located seven miles from the boat landing, forty miles from the railroad and two miles from the nearest land, IN A SALT WATER LAKE, where water for steam use is not available. Cost of handling any other fuel than gasoline for power would make its use almost prohibitive.



Draw Works Unit—2500-ft type, three-speed, reversible clutch—125 h. p. Waukesha engine with reduction gear. This equipment also made in heavier and lighter ranges from 1500 to 6000 ft. drilling depths.



O. W. S. Slush Pump Unit and Waukesha Engine

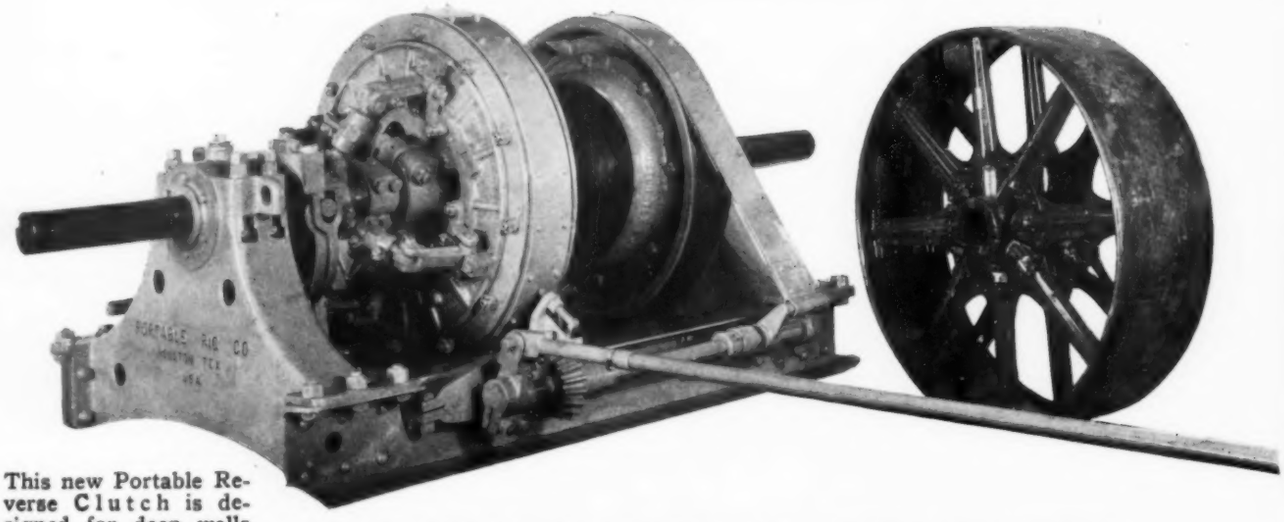
Prices and information upon request—Export Service.

PORTABLE RIG CO.

HOUSTON, TEXAS, U. S. A.

High Speed — Heavy Duty

Latest Design Cable Drilling Unit

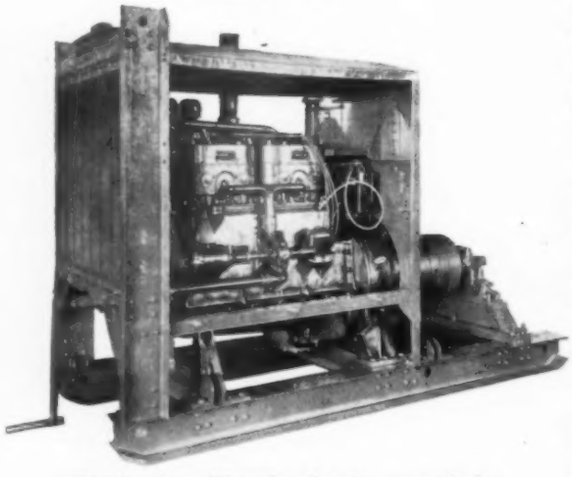


This new Portable Reverse Clutch is designed for deep wells —approximately 6000 ft.

PORTABLE

Highest Achievement in Power and Economy

New Style, Extra Heavy Duty, Reversible Clutch Countershaft for Cable Tool Work. Note extra heavy steel pedestals equipped with Timken Bearings, and extra heavy bearing caps which include hold down eyes for turnbuckles. Unit is equipped with Timken Tapered Roller Bearings throughout and high grade, alloy steel, extra large shaft and extra heavy steel cut reversing gears, having a 40-inch diameter reverse flange and independent brake on clutch pulley.



Waukesha, Ricardo head, 4 cylinder engine, 125 H. P., operates on natural gas or gasoline.

The Clutch in this unit is of a new and extra heavy design, as the clutch friction plate can be readily removed in halves and friction replaced when necessary without dismantling the clutch proper, together with having a minimum number of parts constituting the operating mechanism of the clutch, all of which are extra heavy and the entire unit being built of steel.

The belt pulley on the clutch can be removed in two halves and replaced with a SPLIT SPROCKET FOR USING THIS UNIT FOR ROTARY WORK, which is also accomplished WITHOUT DISMANTLING THE UNIT.

This unit is equipped with standard 50" Flywheel equipped for extra balance rims which can be bolted on and used as desired by the operator.

The weight of this unit complete is approximately 8000 lbs.

We also manufacture a lighter type Reverse Clutch for cable (standard) drilling.

Portable Rigs Cut Your Cost in Half

Portable Rigs combine every worthwhile feature that spells economy, practicability, and speed in DRILLING AND PUMPING WELLS.

* * *

Can be operated where water is so scarce that drilling with steam would be an impossibility.

Fuel—Lubricating oil and a minimum of cooling water is all that's necessary to maintain continuous twenty-four hour service.

* * *

No boilers or steam engines required.

* * *

Can be moved rapidly and cheaply from one job to another.

Manufactured by

PORTABLE RIG CO.

HOUSTON, TEXAS, U. S. A.

West Texas Distributor—DUNIGAN TOOL AND SUPPLY CO.

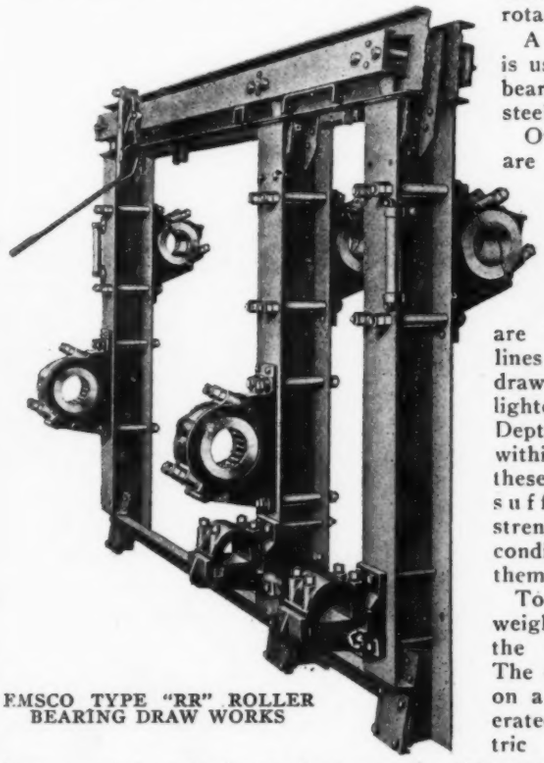
New Emsco Products

EMSCO DERRICK AND EQUIPMENT COMPANY

Emsco Derrick and Equipment Company, 6701-7101 South Alameda Los Angeles, California, has enlarged its line of oil field supplies during the past year by adding a number of items.

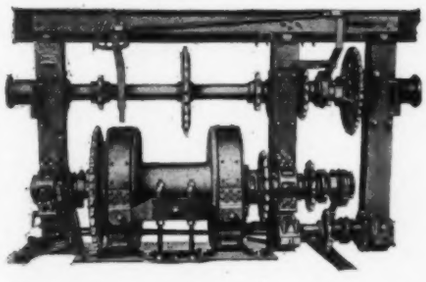
Type "RR" Roller Bearing Draw Works

The new draw works is equipped with large, heavy-duty Hyatt roller bearings, mounted in steel self-aligning boxes and is Alemite lubricated throughout.



EMSCO TYPE "RR" ROLLER BEARING DRAW WORKS

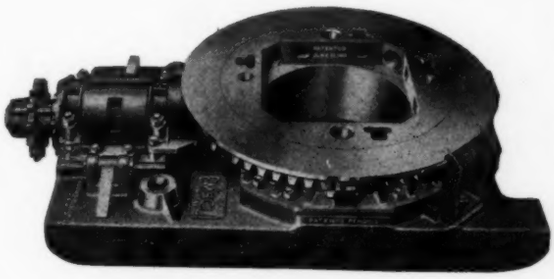
Steel H-beams, 10 by 10, are used for posts, reinforced by plates welded and riveted into place. The drum shaft of this model is eight inches in diameter and is made from an S. A. E. 3135 Chrome Nickel steel forging.



Hardened races for roller bearings are pressed into the shaft.

All Steel Rotary Machine

In the Emsco all-steel rotary, the base is a one-piece steel casting of heavy construction, the skids being formed by two pairs of reinforced ribs extending downward and running the entire length of the casting, thus reducing the overall height of the rotary.



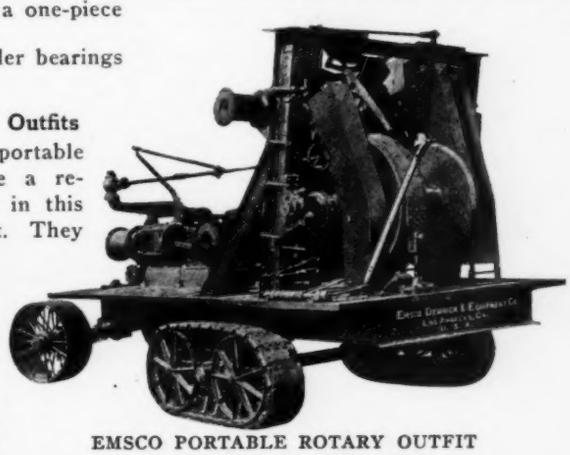
EMSCO ALL-STEEL ROTARY

A unitary pinion shaft bearing is used. The housing for the two bearings is formed by a one-piece steel casting.

Oversize Timken roller bearings are used throughout.

Portable Rotary Outfits

The Emsco portable rotary outfits are a recent development in this type of equipment. They are built along the lines of the standard draw works, but are lighter in construction. Depths of 3500 feet are within the range of these machines, and sufficient reserve strength for emergency conditions is built into them.



EMSCO PORTABLE ROTARY OUTFIT

To facilitate transportation, weight of the outfit is confined to the closes possible limits. The draw works is mounted on a truck, and can be operated by means of an electric motor and reduction gear, multi-cylinder gas engine or steam engine.

Another type of Emsco portable rotary rig is equipped with a differential for self-propulsion, and can be moved at a speed from three to five miles an hour. Power is provided by a 100 horse power, four-cylinder gas engine. A reversing jack-shaft is interposed between the motor and the draw works, so the latter may be reversed, the jack shaft being equipped with a friction clutch and one-to-one reverse, capable of transmitting full power through the reverse. The rotary machine used in connection with this outfit is mounted on the chassis extension, and when the draw works is moved into the derrick, the rotary machine is centered on the derrick floor.

Gardner-Emsco Super Booster Slush Pump

Designed especially for high pressures encountered in deep drilling, the Gardner-Emsco super booster slush pump has a divided fluid end built to withstand a pressure of 1500 pounds, with a steam end of 225 pounds. Water cylinders are separate castings bound together by means of a combined cylinder foot and suction manifold at the bottom and a discharge manifold at the top.

All fluid passages and ports are direct and of liberal size.

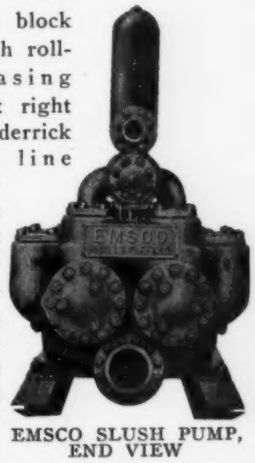
Semi-balanced slide valves are used.

The same type of fluid end is furnished in a power pump with enclosed construction of all working parts and equipped with the flood method of lubrication.

GARDNER-EMSCO PORTABLE SLUSH PUMP

Double Deck Rotary Drilling Crown Block

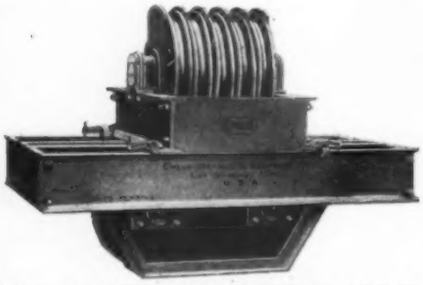
The crown block has five 30-inch roller bearing casing sheaves set at right angles to the derrick and sand line sheaves, eliminating angles of casing lines and permitting maximum elevation of the traveling block This enables handling drill pipe in vari-



EMSCO SLUSH PUMP, END VIEW

ous lengths up to 30 feet without difficulty.

A safety guard protects the sand and crown sheaves from contact with the traveling block. Fourteen hardened and ground roller bearings are embodied in each casing sheave and are held in



EMSCO DOUBLE DECK CROWN BLOCK

place by a bronze retainer. Sheave grooves are made to A. P. I. specifications and are Alemite lubricated.

Roller Bearing Traveling Block

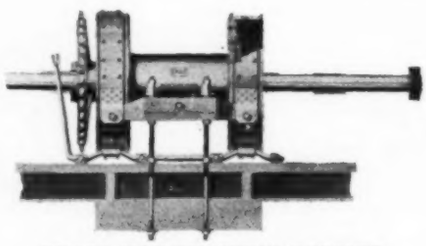
The roller bearing traveling block was designed for heavy duty. A heavy belt facing is provided in the slots of the safety guard which prevents the line from coming in contact with the

EMSCO ROLLER BEARING TRAVELING BLOCK

steel. Sheaves are lubricated by the Alemite system and a powerful Alemite compressor is furnished with each block. The block is equipped with four 30-inch Manganese steel sheaves which run on a six-inch alloy steel hardened and ground sheave pin. Rope grooves are made to A. P. I. specifications.

Non-Bursting Pressed Forged Steel Brake Wheel

The brake wheel is a complete drum assembly including a 36-T low speed drum shaft sprocket, brake bands, brake lever, and brake equalizer, ready for installation in regular size boxes. It is made to fit all makes of draw



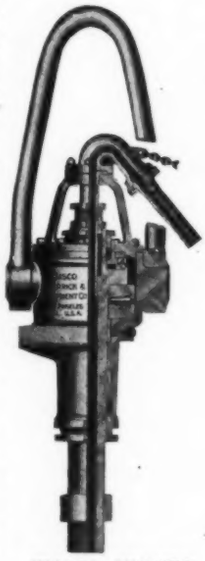
EMSCO NON-BURSTING PRESSED FORGED STEEL BRAKE WHEEL

works, but can be furnished with a 6½-inch diameter shaft with special boxes to fit on regular draw works posts.

All-Steel Rotary Swivels

Emsco rotary swivels are of the wash pipe construction, having an extra large upper ball thrust and oversize wearing parts. The swivel has an extra large conical roller bearing as well as an extra long sleeve bearing.

The bail connection is on the bearing support and has lugs for holding the bail when attaching the hook. A safety chain is provided with the steel goose neck from the hose. Provision is made for re-turning the large diameter sleeve.



EMSCO SWIVEL

The manufacturer will supply further data on request.

Electric Driven Forge

HUTCHINSON ENGINEERING WORKS

The Hutchinson Engineering Works, 549 Washington Boulevard, Chicago,

HUTCHINSON FLO-AIR FORGE BLOWER

Illinois, announces an electric driven oil country forge blower designed for oil country service.

A cast fitting, tapped for standard eight thread, four-inch pipe, is supplied with each blower, which facilitates the connecting up of the blower to the forge.

Motors are furnished with and without motor shaft extension for grinding wheel attachments.

The motor is a heavy duty, one-horse power, 40 degree centigrade motor.

Bearings are of bronze and are oversize. A large oil reservoir packed with wool waste and cotton wicking makes contact with the shaft through a slot in the top of the bronze bearing. The ends of the cotton wicking are at the bottom of the oil reservoir. The wool waste, being springy, holds the lubricant up around and over the bearing and cotton wicking, which conducts the oil into the bearing, giving sufficient lubrication to last a year in normal work. On oil field jobs, however, it is recommended that the lubricant be changed once on each well, as the oil may be spilled out in moving.

More detailed data can be had upon inquiry to the company.

Jensen Safety Hook

JENSEN BROTHERS MANUFACTURING COMPANY

Jensen Brothers Manufacturing Company, Nowata and Tulsa, Oklahoma, have perfected a new safety hook which is used for pulling rods and tubing.

The hook is cast of a special grade of steel, is equipped with roller thrust bearings in the bail, and is machined in all parts.

The hook is so designed that it will not hook the derrick.

Two sizes are obtainable.

JENSEN SAFETY HOOK

More information will be supplied by the company, on request.

DISTRIBUTORS OF:

"REPUBLIC"

CASING, LINE PIPE, DRILL PIPE AND TUBING

Standard Seamless Oil Country Pipe
Broderick & Bascom Wire Lines
Hughes Tool Co. Products
Crotty & Company Cable Tools
Gumbo Buster Rotary Machinery
Jones Sucker and Pull Rods
Howe Rotary Chain
Powell Valves
Walworth Fittings
Wall Manila Cordage
Republic Rubber Belting
R&J Dick Balata Belting and Valves
Kibele Pressure Pistons
Spang Weldless Drilling Jars
Hough Pumping Equipment
Bradford Pumping Equipment
Penberthy Injectors
"Primm" Oil Drilling Engines

Complete Stocks of Oil Field Supplies at Twenty-Five Stores in

OKLAHOMA TEXAS LOUISIANA ARKANSAS

Republic Supply Company

GENERAL OFFICES-HOUSTON, TEXAS

OIL AND GAS WELL SUPPLIES
ROTARY AND CABLE TOOLS

Say you saw it in The OIL WEEKLY

"GUMBO BUSTER"

GUMBO BUSTER is the trade name given by the American Well & Prospecting Company of Corsicana, Texas, to their complete line of practical Rotary Drilling Machinery capable of drilling any well by the Rotary method, from the shallowest to the deepest.

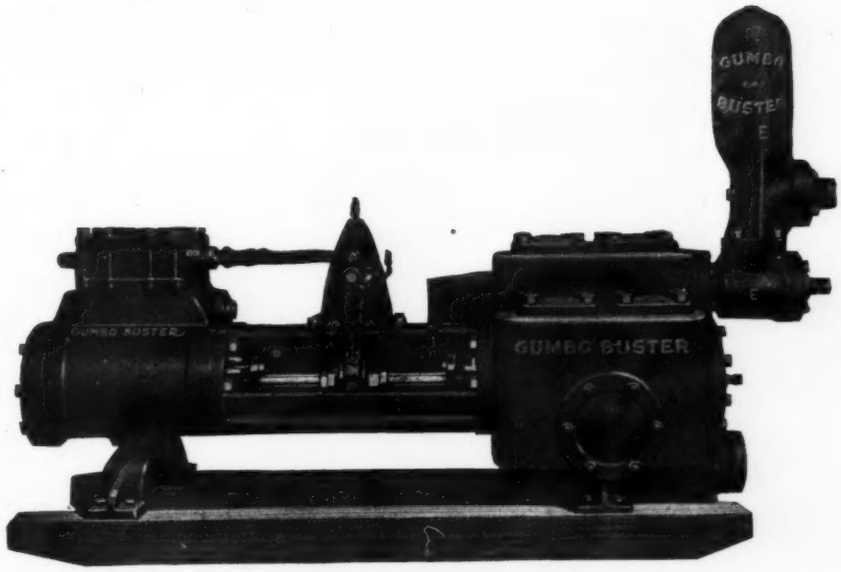
On the following pages is shown a complete Gumbo Buster Rig designed to be, and by actual test under the most severe conditions, proven to be most practical and economical in the drilling of the deepest wells by the Rotary Method.

Republic Supply Company

OIL AND GAS WELL SUPPLIES
ROTARY AND CABLE TOOLS

Say you saw it in The OIL WEEKLY

"GUMBO BUSTER"



Gumbo Buster F Slush Pump

1. SIZE—12" x 6¾" x 16"
   The Gumbo Buster F Pump was the first slush pump to use the long sixteen inch stroke, which decreases the number of reversals, thereby increasing the life of the valves, seats and all moving parts.
2. VALVE AND VALVE SEATS
   The Gumbo Buster F Pump was the first to use the 45 degree taper valve and seat, which increases the life of valve and seat.
3. FLUID END
   The Gumbo Buster F Pump was the first to use a fluid end so designed that the fluid enters the liners making but two right angle turns instead of four as in previous designs, thus allowing fluid end liners to fill quickly and easily under any steam pressure and at all speeds. Fluid ends tested to 1000 pounds pressure.
4. STEAM PRESSURE.
   The Gumbo Buster F Pump was the first slush pump so designed that it would work satisfactorily and economically with 200 pounds steam pressure.
5. PROVEN
   There are several hundred Gumbo Buster F Pumps in actual operation under the severest conditions.

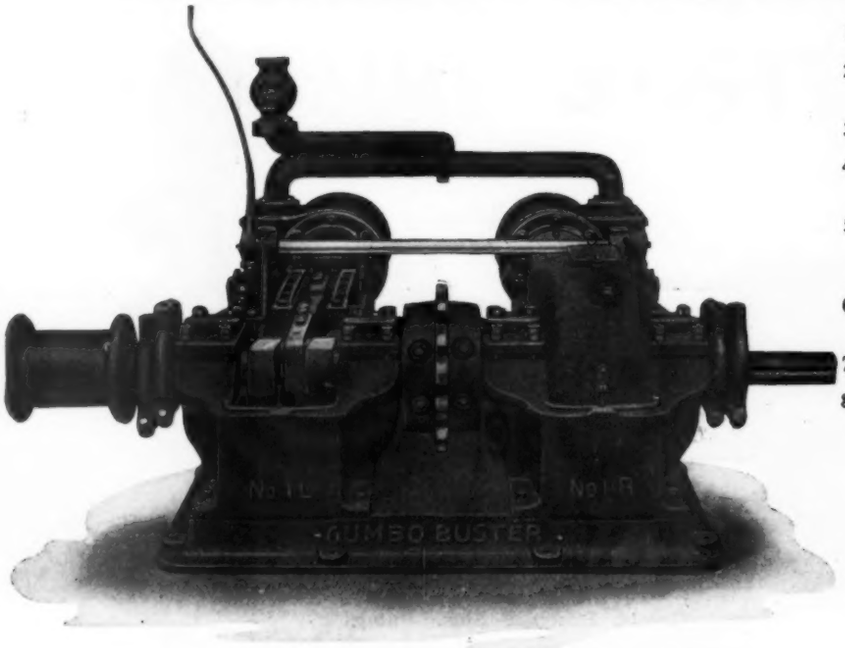
Note: New Gumbo Buster G Slush Pump (14½" x 7¼" x 18") is now undergoing field tests.

Sold exclusively by

Republic Supply Company

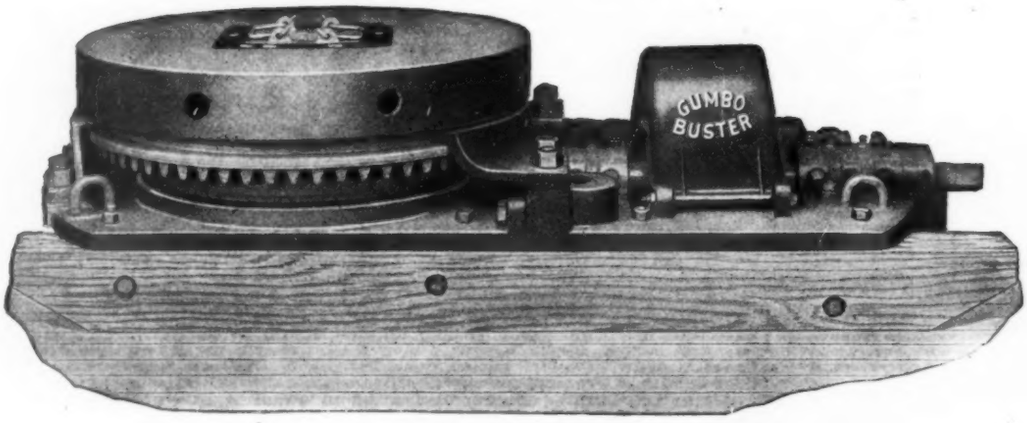
OIL AND GAS WELL SUPPLIES
ROTARY AND CABLE TOOLS

"GUMBO BUSTER"



1. 12"x12"
2. Enclosed and oil bath.
3. Four main bearings.
4. Outside valve rigging.
5. Cathead for setting up and tearing down.
6. Can run on one cylinder.
7. No dead centers.
8. Solid double throw forged steel crank shaft.

Twin Cylinder Drilling Engine



Gumbo Buster 20" Make and Break Rotary

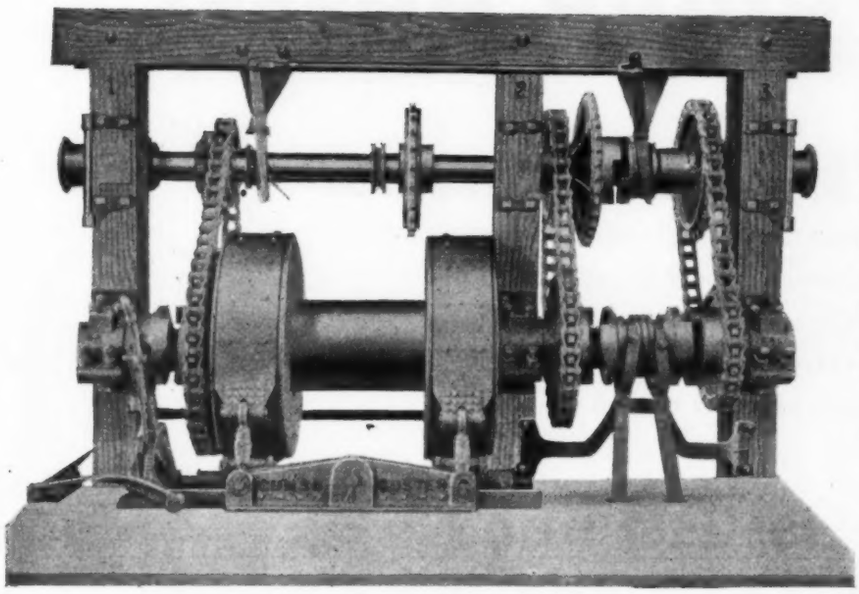
1. Working parts made from chrome nickel steel.
2. Large pinion and shaft and adjustable bronze bearings.
3. Simple design. No pins, bars, or double tables used.

Sold exclusively by

Republic Supply Company

OIL AND GAS WELL SUPPLIES
ROTARY AND CABLE TOOLS

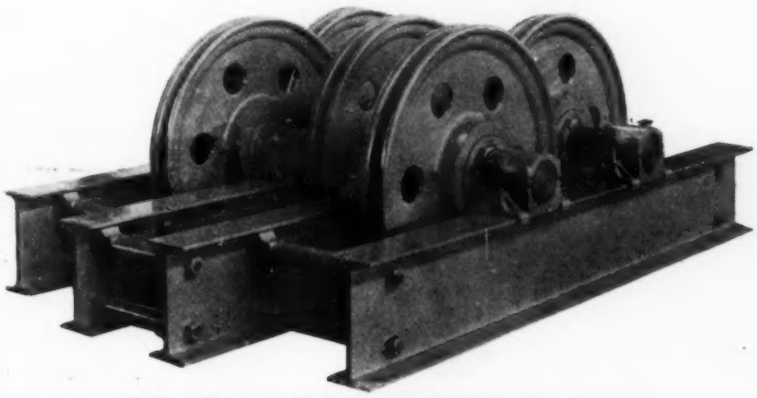
"Gumbo Buster"



1. Three Speeds.
2. 7 inch line shaft.
3. 8 inch drum shaft.
4. Brake linings 12½" wide.
5. Drum 20" in diameter.
6. Floor type equalized brakes.
7. Chrome nickel steel used throughout.

Gumbo Buster 78A Drawworks

1. All steel construction.
2. Large Timken roller bearings.
3. All sheaves 30" in diameter.
4. Special Heat treated chrome nickel steel sheaves.
5. Alemite lubrication.
6. Choice of roller bearing or bronze bushed sheaves.
7. Sheave grooves machined to A. P. I. specifications.



Roller Bearing Russian Model B Crown Block

Sold Exclusively by

Republic Supply Company

OIL AND GAS WELL SUPPLIES
ROTARY AND CABLE TOOLS

"Gumbo Buster"

1. Largest and strongest.
2. Large cones and bearing plates hardened and ground.
3. Large and deep packing glands easily accessible.
4. So designed that bail held in position at all times.
5. 3 inch water course throughout.
6. Will safely carry 6,000 feet of drill pipe.
7. Weight of drill pipe not carried by bolts.

8" Cone Bearing Oil Bath Swivel

Gumbo Buster Roller Bearing Traveling Block.

1. 66 inches.
2. 7" hardened and ground center pin.
3. 36" Sheaves.
4. Choice of 3 or 4 sheaves.
5. Large roller bearings.
6. New design steel wire line guard quickly removed or replaced without unstringing block.
7. Alemite lubrication.
8. All protruding bolts and nuts tapered and protected.
9. Perfectly balanced at all times.

Sold Exclusively by

Republic Supply Company

OIL AND GAS WELL SUPPLIES
ROTARY AND CABLE TOOLS

Howe Chain

S-40 Steel Roller Chain. Pitch 3.075 in.
Average Ultimate Strength 28,000 Pounds.

Don't Waste Your Driller's Time Give Him the BEST in Rotary Chain

The S-40 and S-124 types of Howe Steel Drive Chain are especially built to withstand the hard, grilling service required of chain at the oil well. Exceptional performance under trying conditions has established the reputation of Howe Chain wherever oil well chain is used.

HOWE XS-40 and XS-1240 Chains are made of heat treated alloy steel, and are 60% stronger than Howe S-40 and S-124 respectively. All parts are **interchangeable** with HOWE S-40 and S-124 Chain.

HOWE CHAIN CO., Chain Specialists, Muskegon, Mich.
Link Belt Co., Owner.

◇◇◇◇

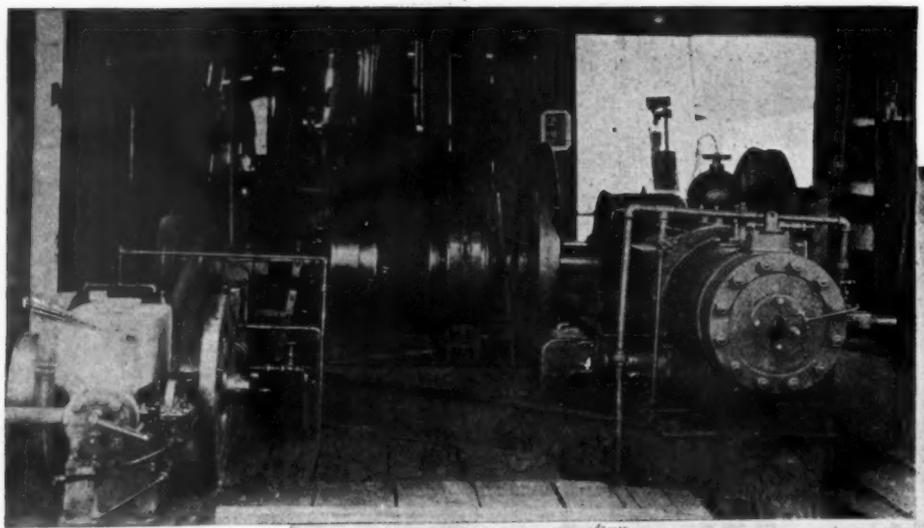
In Texas, Oklahoma, Louisiana, Arkansas

Sold Only By

Republic Supply Company

OIL AND GAS WELL SUPPLIES
ROTARY AND CABLE TOOLS

"PRIMM" Drilling Engine



A "Primm" Drilling Engine and "Primm" Reverse Clutch

1. LOW COST—Compared with any other drilling unit the "PRIMM" costs but very little where value received is considered. The superior, finer, heavier construction pays for itself on one or two wells.
2. EASILY OPERATED—By the steam rig driller or a new man. All controls are at the derrick and engine responds "right now."
3. LESS FUEL NEEDED—Less than a barrel of oil per 24 hours is needed under the worst conditions.
4. NOT MUCH WATER—Requires about 100 barrels less water per day than a steam rig.
5. BIG RESERVE POWER—"PRIMM" Drilling Engines develop far more power than any drilling requirement calls for. You can't choke them down.

(Also, Engines for all kinds of pumping and industrial Uses)

Distributed By

Republic Supply Company

GENERAL OFFICES - HOUSTON, TEXAS

OIL AND GAS WELL SUPPLIES

ROTARY AND CABLE TOOLS

Say you saw it in The OIL WEEKLY

New National Products

NATIONAL SUPPLY COMPANY

The National Supply Company, Toledo, Ohio, has placed on the market several items of new equipment of special interest to oil operators.

National Type BJ Tubing Hoist

The National type BJ tubing hoist is a single shaft, jaw-clutch type for handling sucker rods and tubing with pumping units such as the Ideal double reduction gear.

The hoist is erected on the side of the derrick floor nearest the reduction gear and is driven by a 1030 chain from a driving sprocket on the outboard end of the reduction gear crankshaft. The jaw-clutch hoist is particularly adapted to reduction gears driven by a fully controlled electric motor.

This hoist is mounted on two hardwood posts similar to drawworks posts which are furnished as standard equipment.

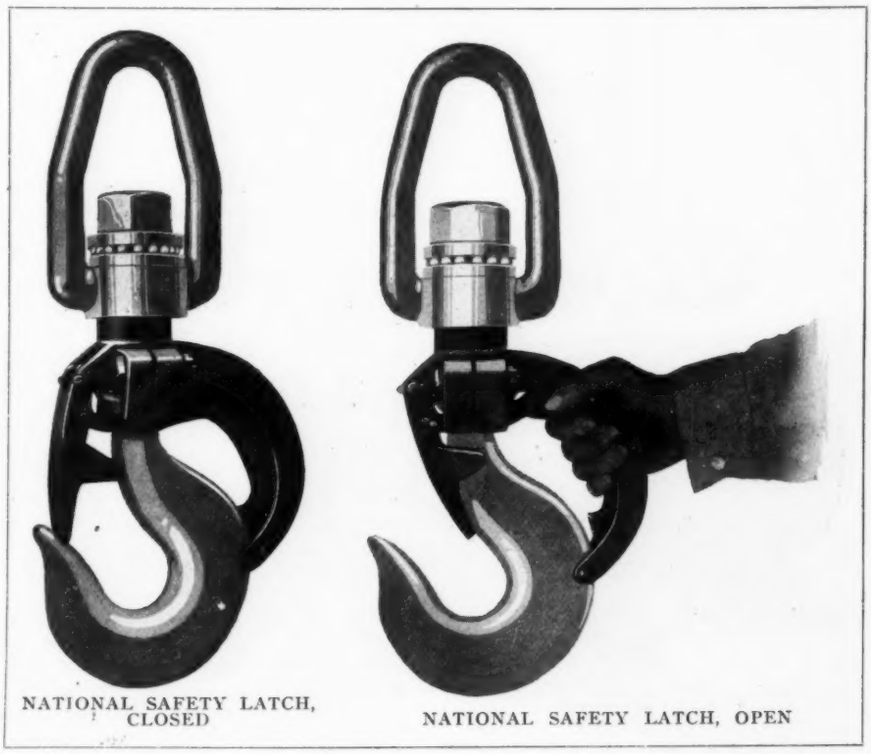
The shaft is five-inch forging carbon steel, turned, finished and key seated. Standard drawworks boxes are used. They are lined with babbitt and provided with generous oil boxes.

The drum is 16-inch O. D. heavy pipe. This in reinforced inside by heavy cast iron spacers between the shaft and drum, occupying the entire space between flanges. It is possibe to easily handle a double of tubing with four lines, using only the first layer on the drum. This is desirable, especially when running in the hole when the line is spooled loosely and then unwound under load.

The hoist is equipped with one large brake drum 48 inches in diameter by eight-inch face. The brake band is lined with standard draw works lining five-eighths inches thick.

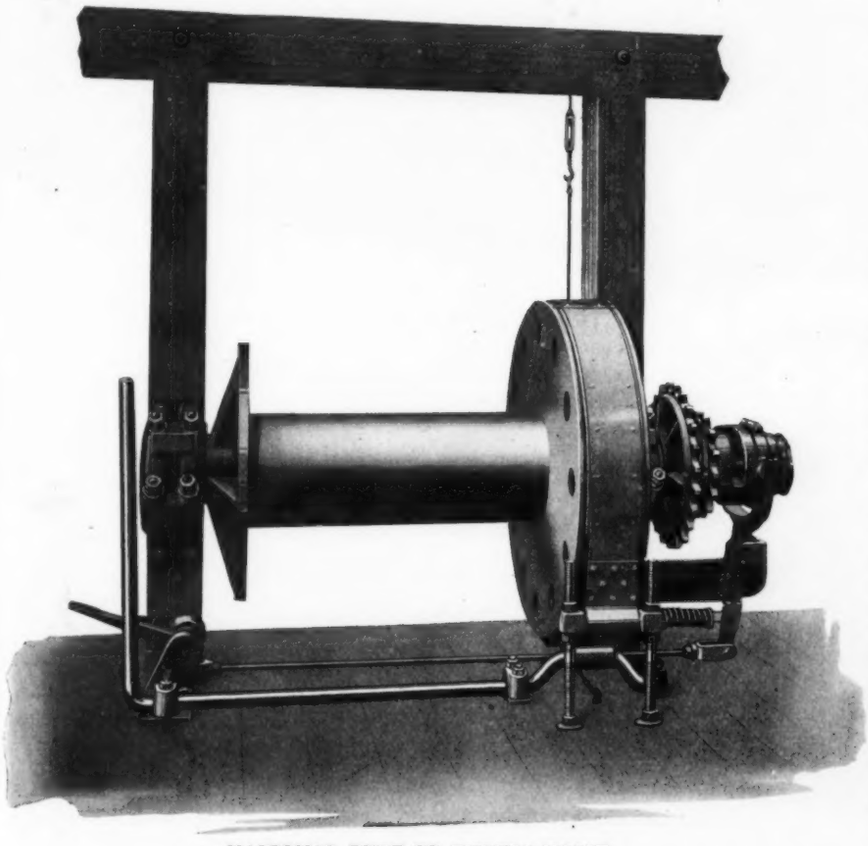
A double sprocket is used having 24 teeth on one rim and 15 on the other. This provides a choice of speeds and pulling power for different duties by shifting the chain. The clutch jaws are machined. The center line between the two sprockets is aligned with the driving sprocket on the reduction gear.

The bronze clutch shifter ring encircles the groove in the clutch, giving a construction which retains lubricant and excludes dirt. The steel shifter fork is fulcrumed on a structural steel arm secured to No. 2 post. Consistent with wooden drawworks practice, the clutch is operated by a foot pedal conveniently located. This also provides a safety feature.



NATIONAL SAFETY LATCH, CLOSED

NATIONAL SAFETY LATCH, OPEN



NATIONAL TYPE BP TUBING HOIST

National Type NA Safety Latch

The safety latch is for attachment to National standard drop forged hooks in sizes from one and three-fourths inches to three and one-half inches inclusive.

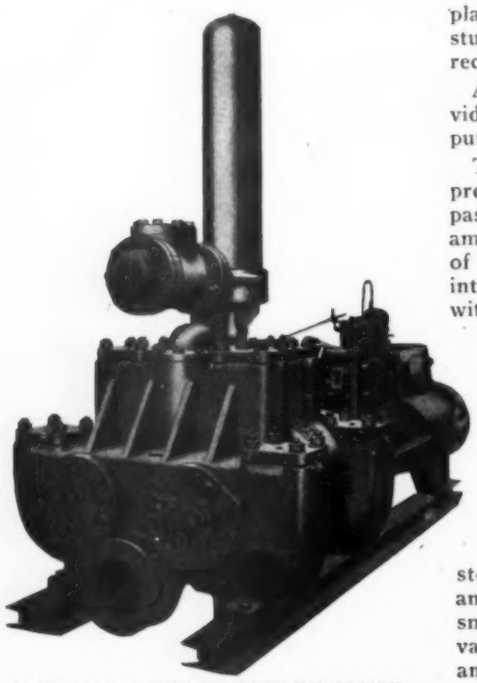
The latch body is composed of two steel castings, a latch half and a handle half, which embrace and are clamped around the shank of the hook by two bolts. The steel latch is pivoted in the latch half of the body and the trigger is pivoted to the inside of the handle. These are joined by steel links.

The handle of the latch provides an easy and safe way of guiding or lifting the hook. The trigger is so located that only a tightening of the grip on the handle is required to operate the latch. The latch is spring mounted so that the elevator bail may be snapped into place.

Ideal Duplex Slush Pump

The new Ideal Duplex slush pump was designed for the heaviest rotary drilling service where large volumes of mud laden fluid are required at extremely high pressures.

The pump, 14½ x 7½ x 18, is rated



NATIONAL "IDEAL" DUPLEX SLUSH PUMP, END VIEW

for 250 pounds steam pressure and 1500 pounds water pressure.

It is claimed by the company that with the 7½-inch liner at a speed of 40 r. p. m., and with a volumetric efficiency of 80 per cent, this 18-inch stroke pump will deliver 630 barrels of fluid per hour, or 15,000 barrels per day.

Fluid cylinders are designed for 1500 pounds working pressure, each one being tested to 2000 pounds hydraulic pressure. Fluid cylinders are of the straight-away type with large direct fluid passages. Suction valves are below the top of the water cylinders. All sections are cylindrical or spehrical as nearly as possible.

The seven and one-half and the seven-inch liners are seamless steel forgings. Liners are easily removable, being packed into the fluid cylinder with a rubber ring and held in place by set screws through the cylinder head acting on a steel liner cage.

Upper and lower guided valves of the standard Ideal design are used Seats which are pressed into the cylinder body are made of heat treated drop forgings. The valve cover is fitted with renewable guide bushing. Access to the valves is had through eight cover plates held to the cylinder with four studs each and packed with continuous recessed gaskets.

A stuffing box suction flange is provided as regular equipment on this pump.

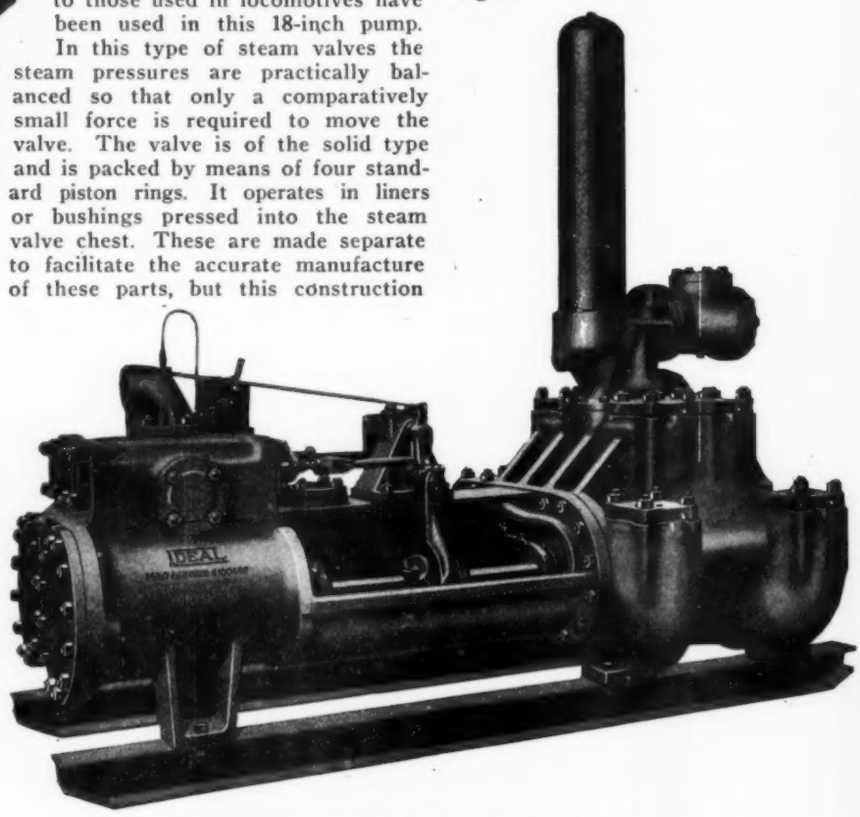
The steam cylinder is designed for pressures up to 250 pounds. Port passages are short and arranged for ample cushion of the piston at the end of the stroke. The valve chest is cast integral. The cradle is cast integral with the steam cylinders. A water piston rod lubricator box is cast in the cradle. This is pressure tight and is provided with screwed connections so that water under pressure may be used for lubricating the rods.

Balanced piston valves similar to those used in locomotives have been used in this 18-inch pump. In this type of steam valves the steam pressures are practically balanced so that only a comparatively small force is required to move the valve. The valve is of the solid type and is packed by means of four standard piston rings. It operates in liners or bushings pressed into the steam valve chest. These are made separate to facilitate the accurate manufacture of these parts, but this construction gives the added advantage of permitting these parts to be replaced should they ever wear.

The rock shaft stand is securely bolted to the cradle. Ample lubricating pockets are provided for either oil or Alemite lubrication. The levers and cranks are steel castings. These and the links are fitted with well protected Alemite connections. The lever roller which operates in the crosshead is fitted with an oilless bronze bushing.

The crosshead is of the large spool type allowing the piston and rod assembly to revolve an dequalize wear Special locking washers provide for locking the crosshead, piston rods and piston rod jam nuts into a rigid assembly.

Provision is made to attach a standard two-quart, single-feed lubricator. Tapped holes are provided in the steam chest for bolting down the lubricator and a small extension lever is provided on the right hand valve crank for driving it.

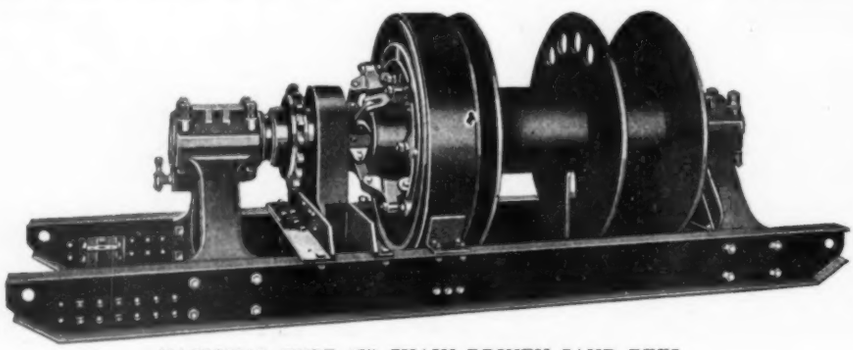


NATIONAL "IDEAL" DUPLEX SLUSH PUMP

National Type "J" Chain Driven Sand Reel

The sand reel was designed for handling the bailer or sand pump in heavy cable tool drilling service.

The reel is mounted loose on the shaft, turning on Hyatt Roller Bearings. The sprocket and clutch assembly are keyed to the shaft. When the clutch is engaged to raise the bailer, the complete shaft assembly turns in the journal bearings. When lowering the reel with the clutch disengaged, the reel only revolves on the roller bearings running on the stationary shaft. The drum is assembled as a unit on a heavy cast hub in which the roller bearings are mounted. The brake drum and flanges and reeling drums are mounted on this hub. The center



NATIONAL TYPE "J" CHAIN DRIVEN SAND REEL

Watch for it!
the New Le Bus Packing-off and Backing-off Overshot
Establishing an entirely new standard of Overshot Efficiency!

flange is drilled to balance the cross-over slot.

A twin-disc friction clutch is used on this sand reel. The center plate carrying the friction linings is bolted to the brake drum. The floating friction rings are carried on a hub keyed to the shaft. The clutch is adjusted by means of four set screws. Reserve braking capacity is provided by the 42x8-inch drum.

The brake and clutch are in accordance with standard practice, being so inter-connected that the brake is applied as the clutch is disengaged and vice versa. The reach rod from the derrick floor runs direct to a lever on the brake shaft of the sand reel, eliminating chance of losing control of the brake through the failure of intermediate linkage commonly used. A cam cylinder on the brake shaft engages the clutch shifter lever directly without intermediate linkage. An additional safety feature is provided by the shaping of this cam groove so that after the clutch is completely disengaged, further operation of the brake lever is not limited by the clutch control.

Bearings are lubricated by Alemite cups located on the walk end of the shaft. The grease is conducted to the bearings through a hole along the center of the shaft. The shaft runs in babbitted journal bearings which are self lubricated by double chain oilers communicating with reservoirs in the bearings.

The crankshaft sprocket runs loose on a quill keyed to the crankshaft. A jaw-clutch provides for stopping the driving chain during drilling operations.

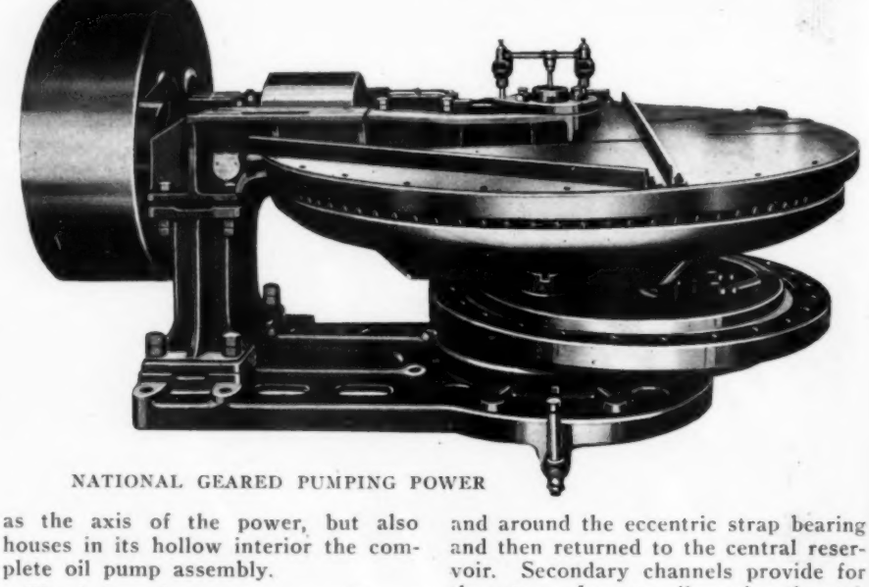
The National chain driven sand reel is furnished complete with crankshaft sprocket and all levers not only for controlling the friction clutch on the reel, but also the jaw-clutch on the crankshaft. The driving chain is not furnished.

Geared Pumping Power

The National No. 7 Geared Pumping Power is designed as the principal unit for a central lease pumping plant for handling a total load of approximately 25 horsepower. It is furnished for either belt or direct motor drive. The salient feature of this type of power is the small space required for the installation.

This power is essentially the same as the No. 9-C single eccentric Bandwheel Power, except that the bandwheel is replaced by a horizontal bevel gear and pinion drive. However, the single No. 7 eccentric for either 18-inch or 24-inch stroke is interchangeable with the lower eccentric of the 12-C Power rather than the 9-C.

The flood oiling system used on the National bandwheel powers is a part of this new No. 7 Power. The base and spindle are integral, made from semi-steel. The large base insures a firm mounting on the foundation and in addition it is extended to carry the outer pinion shaft bearing assembly. The large diameter spindle serves not only as the axis of the power, but also houses in its hollow interior the complete oil pump assembly.



NATIONAL GEARED PUMPING POWER

The hub and eccentric assembly on this power has been made rigid to take the reaction of the bevel gears. An annular portion of the main gear hub is extended down through the eccentric hub. In addition the hub and eccentric are secured together by two two-inch tie bolts. The driving torque is evenly distributed by means of the adjusting arm construction used on National bandwheel powers. A new type eccentric and strap having a covered oil groove is standard equipment.

The main gear drive of this power is through a bevel gear and pinion. This drive is inverted so that the gear thrust is downward and also so that oil may be retained on the gear teeth. The main bevel gear is made of semi-steel cast integral with the hub. The pinion is a steel casting. An oil trough is provided on the outer periphery of the gear to retain a supply of lubricant.

The pinion shaft is supported in two chain-oiled babbit bearings carried in a heavy frame, the inner end of which is carried on the spindle and the outer end on the bearing pedestal. The frame carrying the pinion shaft bearings is adjustable vertically by means of shims to provide adjustment for the main bevel gears.

A 32-inch by 13-inch cast iron belt pulley is regularly furnished on the outer end of the pinion shaft. Thirty-six inch and 48-inch pulleys are available for drives using other than the low speed oil field engines.

The interior of the spindle forms an oil reservoir. In this a pump is submerged which is actuated by a lever whose outer end is engaged a cam groove in the revolving hub of the power. Oil is lifted by this pump and discharged through two sight feed regulators. The discharge of one of these regulators flows into the upper spindle bushing, then through the lower spindle bushing and out through the lower thrust bearing to the reservoir, bathing this assembly in a flood of lubricant.

The oil from the second regulator is conducted through large passages to and around the eccentric strap bearing and then returned to the central reservoir. Secondary channels provide for the return of excess oil passing through the bearing. The pinion shaft bearings are provided with double chain oilers running in a large oil reservoir cast under the bearings.

Dust guards are provided over all the oil pockets. Large steel guards house the main bevel gear drive as a safety measure for the operation.

This power is furnished in either the standard belt drive or for motor drive. The motor drive requires the provision of a sub-base mounted on top of pinion shaft bearing assembly. A spur gear driven by a pinion on the motor shaft replaces the belt pulley. An oil-tight steel guard houses these gears and provides for splash lubrication.

Miller Truck Tire

MILLER RUBBER COMPANY

The Miller Rubber Company, Akron, Ohio, announces a new balloon tire for truck use.

In this new product maximum strength has been maintained with only eight plies. The tire uses the flat geared-to-the-road tread.

MILLER TRUCK TIRE

DEPENDABILITY!

—For You Too, Mr. Oil Man!

This Lock Nut has been tried and proven. Since 1900 this company has been making nuts for the railway field. No harder test could be given them—they are now standard with many companies—your tank cars from the American Car & Foundry Co. are equipped with them.

Columbia Lock Nuts

take a grip that cannot slip

Think of the significance of the above statement—it is not an idle claim but a fact we will be glad to prove. Does hard usage or high winds scare you when you are on the derrick floor. Need not if fitted with Columbia Lock Nuts—because these Nuts are strong and will stand firm. Next time you make out a requisition for nuts specify Columbia. They have given satisfaction to many field superintendents.

Columbia Devices to Keep Cars Moving

Columbia Lock Nut

Columbia Gib Nut

Columbia Castle Nut

Try them on your Lift Jacks and Spudders.

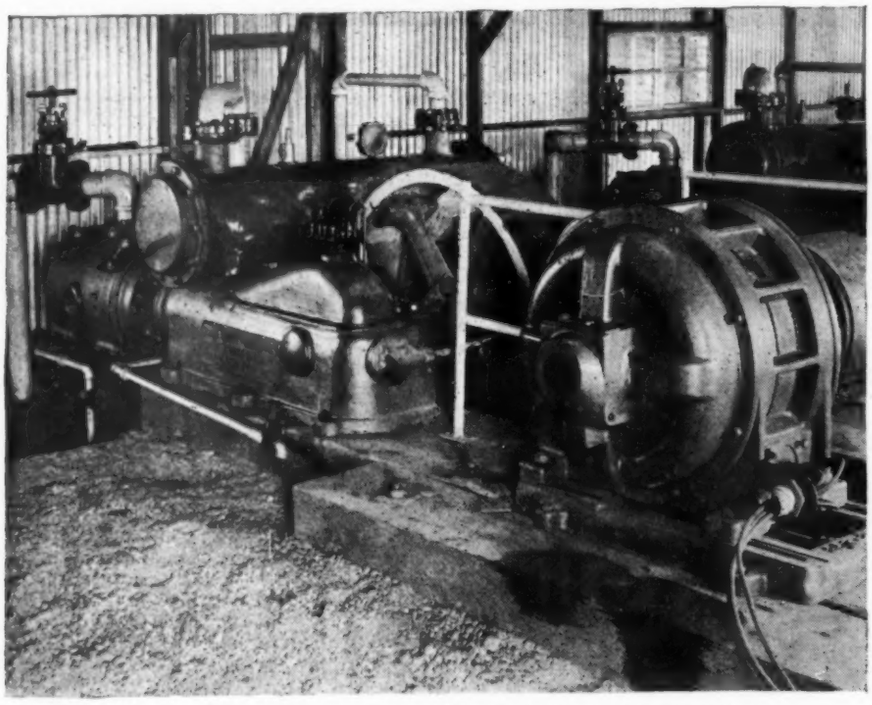
Samples Furnished.

JOBBERS—*Write for Information*

We have an attractive proposition for distributors. Send for full details. This profitable and satisfactory line will help you to better please your customers.

Columbia Nut & Bolt Company, Inc.

Bridgeport, Conn.



INGERSOLL-RAND TYPE XOB COMPRESSOR, MOTOR DRIVEN

Ingersoll-Rand Products

INGERSOLL-RAND COMPANY

Ingersoll-Rand Company, 11 Broadway, New York, has introduced two new products of special interest to oil producers, recently.

Type XOB Air and Gas Compressor

The type XOB air and gas compressor was built to meet specific needs of the oil industry in air and gas lift pumping. The outfit has been built small and compact to facilitate its transportation over bad roads and to promote easy installation under the usual field difficulties.

The required pumping pressures vary widely, ranging in some fields to as much as 1000 pounds at the blow-off point, although the running pressure may not exceed 300 pounds. Features to take care of these demands in the XOB include automatic plate valves throughout, balanced duplex construction, and reciprocating parts.

The design with cranks at 90 degrees produces a steady, smooth running unit.

Duplex construction makes it possible to change cylinder combinations easily and quickly in the field. A complete line of interchangeable cylinders, covering the complete range of oil well pumping conditions is now available for the compressor.

The company has developed an inexpensive fabricated steel sub-base for the outfit. This is fitted with a unique arrangement for leveling the machine after the sub-base has been anchored to the timbers. The sub-base makes it possible to use small timbers for the mounting.

Stuffing boxes are easily accessible for adjustment. The running gear has generous proportions and yet is light in weight.

Type XG Gas Engine Compressor

This compressor is direct-connected to a four-cycle gas engine.

Economy of floor space is obtained in combining the power plant and the compressing unit in one machine.

Chief among the features of the machine are rugged, yet accessible frames and running gears, the construction of power cylinders, the valve gear and its drive, and the special method of alignment.

Parts of the power ends are completely interchangeable.

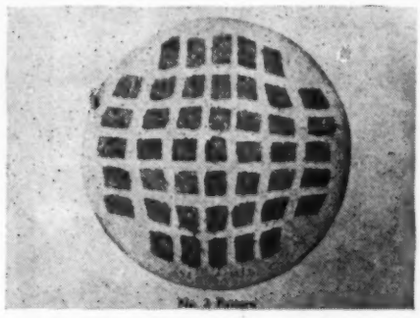
The general design of the machine is known as the four-corner frame construction.

The compression end can be furnished to accommodate any of the usual conditions of pressure range.

Oil Field Tool Steel

PAUL ARBON AND COMPANY

A steel especially adaptable for making oil field equipment and meeting the requirements for other uses in the industry has been developed by the Edgar Allen Steel Company, Inc., of England, and distributed to the oil industry by Paul Arbon and Company of Tulsa.

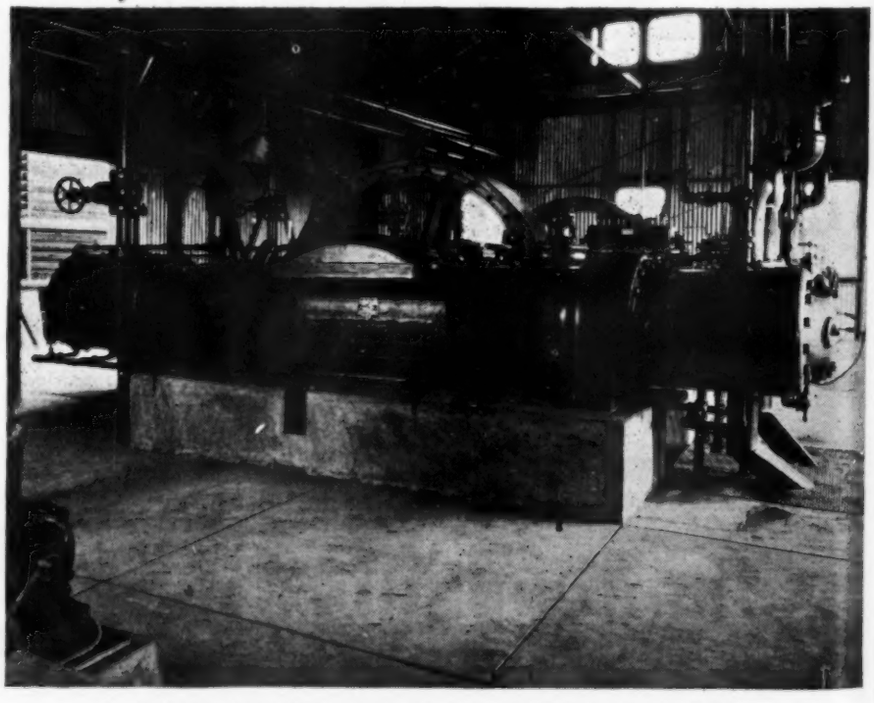


CROSS SECTION OF NEW EDGAR ALLEN STEEL

This steel is called iron fibred steel and is said to possess the strength of steel coupled with the fibrous toughness of iron.

It is readily forged, welded, stamped, flanged, punched, screwed, machined and case-hardened.

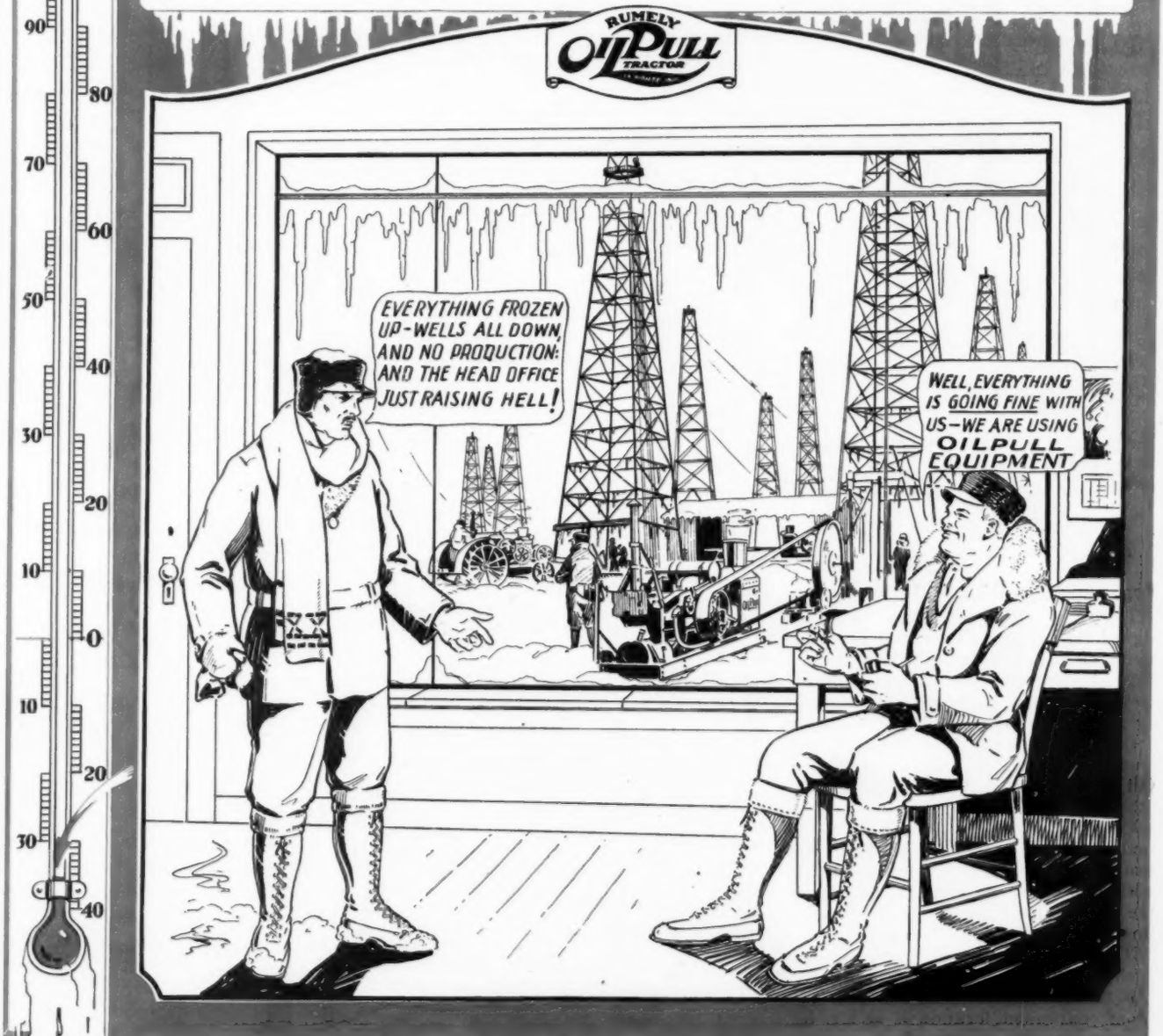
Further information may be obtained from Paul Arbon and Company of Tulsa.



INGERSOLL-RAND TYPE XG GAS ENGINE COMPRESSOR

36° BELOW ZERO! Let 'er freeze!

". . . we are positively insured *against frozen engine blocks, circulating tanks and water lines—for we use the famous* OilPull, oil-cooled *stationary engines and winch tractors on all our beam pumping wells, pumping power plants and for pulling all of our rods and tubing"*


RUMELY
OILPULL
TRACTOR
EVERYTHING FROZEN UP-WELLS ALL DOWN, AND NO PRODUCTION: AND THE HEAD OFFICE JUST RAISING HELL!
WELL, EVERYTHING IS GOING FINE WITH US—WE ARE USING OILPULL EQUIPMENT

EVERY RUMELY OILPULL WINCH TRACTOR THAT HAS EVER BEEN SOLD IS STILL WORKING

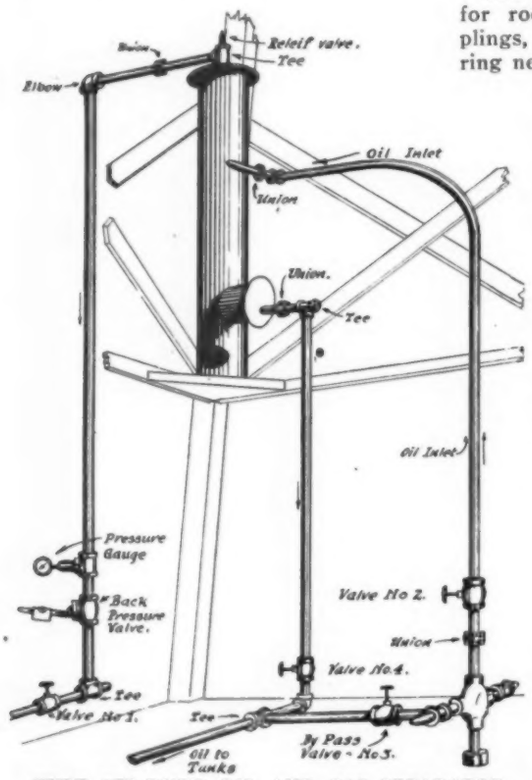
Write **FRED E. COOPER** Phone 8904

TULSA, OKLAHOMA

Duro Company Products

DURO ENGINEERING COMPANY

The Duro Engineering Company, 119-127 North Pomona Avenue, Brea, California, announces four new items developed during the year.



TYPE "C" DURO OIL AND GAS SEPARATOR

Type "C" Duro Oil and Gas Separator

The type "C" separator was designed especially for installation on wells producing up to 200 barrels per day. It will operate on pumping or jack wells, and with a back pressure or a vacuum on the well.

It incorporates all the well proven features of the Standard Duro Gas and Oil Separators. A three-inch self-cleaning oil outlet valve is assembled within the body of the trap and is actuated by a counterbalanced float. All connecting arms are entirely enclosed within the trap. A petticoat baffle at the gas outlet assures dry gas in the line.

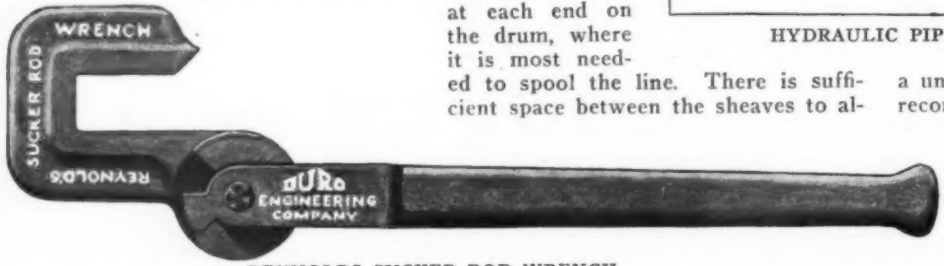
The Type C Duro Trap may be easily installed in the derrick or near the tanks. Many operators find the most convenient location is at a point in the derrick above the receiving tanks. This installation has three advantages: it places the separator out of the way, it allows a gravity flow of the oil to the receiving tanks, and it is not necessary to carry a back pressure on the well.

Reynolds Sucker Rod Wrench

The Reynolds Sucker Rod Wrench for rod boxes, pin joints, and couplings, gives the hammering or jarring necessary to positively tighten or to break the threads.

The Reynolds rod wrench embodies the hammer principle within itself and eliminates the necessity of jarring on the sucker rods and sucker rod boxes with a hammer.

To operate, place the wrench over the square on the sucker rod, then bring the handle forward to the stop and use as an ordinary wrench. After making up the threads as tightly as possible with a straight pull, jar the threads with the wrench by pivoting the handle with force against the forward stop in the wrench head.



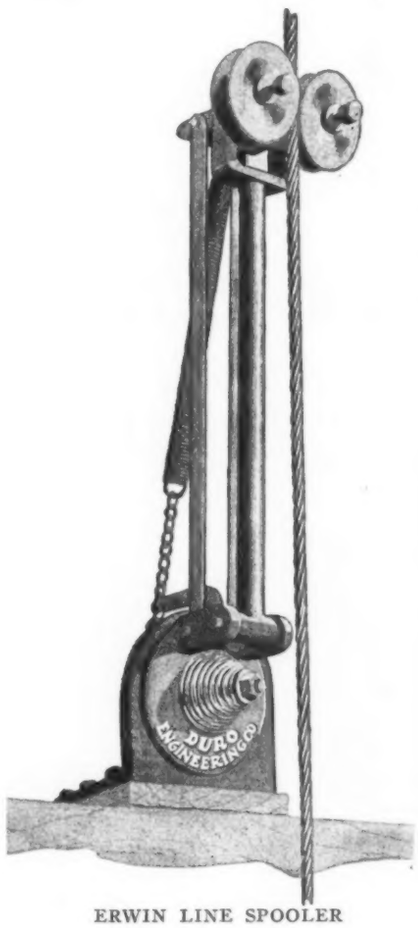
REYNOLDS SUCKER ROD WRENCH

Erwin Line Spooler

The Erwin line spooler is said to maintain a constant tension on the line and prevent it from piling up, whipping, cutting or spacing.

The mechanical means employed to maintain friction and consequent tension on the line confines the friction to one point, a disc plate. The sheaves pivot back and forth across the drum in an arc with the center of the friction plate as the center of the arc. At the point of friction the clutch plate is faced with a brake lining. A heavy spring, with an adjustment for any tension desired maintains a constant tension on the friction plate and compensates for wear on the lining. The clutch is completely enclosed.

The greatest resistance on the line is exerted at each end on the drum, where it is most needed to spool the line. There is sufficient space between the sheaves to allow the line to start its return wrap without resistance.



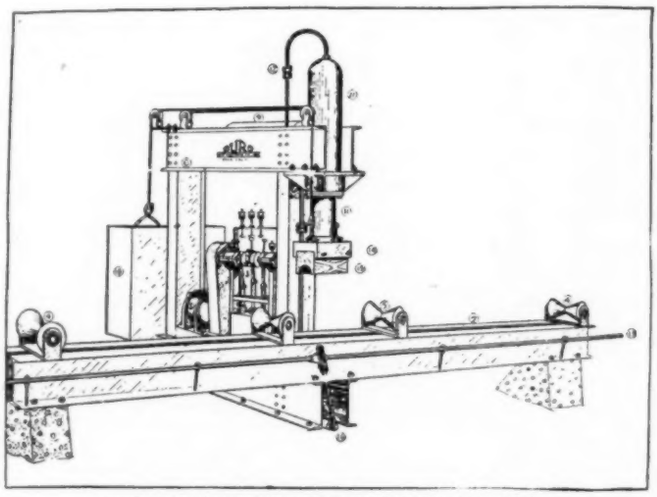
ERWIN LINE SPOOLER

Duro High Pressure Hydraulic Pipe Straightening Unit

The Duro pipe straightening unit is a universal machine for oil field work, recommended for straightening all sizes of pipe up to 15½-inch casing, the largest size drill collars, sinker bars, kelleys, shafts, etc.

The outfit is composed of two units: the pump frame and the

(Continued on page 55)



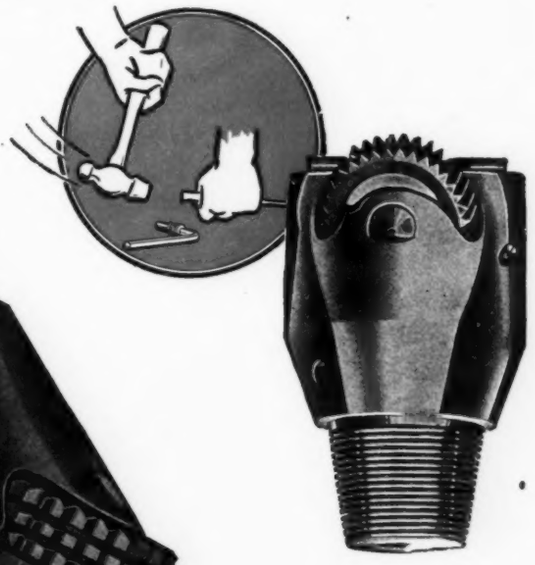
HYDRAULIC PIPE STRAIGHTENING UNIT

REED ROTARY DRILLING TOOLS
SPEED · ECONOMY · DURABILITY

Keeping Pace *with* Drilling Needs

THE trained engineers and metallurgists employed by the Reed Roller Bit Company are constantly experimenting and devising new and more effective means for overcoming the difficulties which arise, from time to time, in the various oil fields of the world.

In the Reed Laboratory a test drilling machine proves the quality of Reed tools under conditions which approximate as nearly as possible those found in actual drilling. Drilling problems are scientifically studied and means for overcoming them arrived at. Thus when we recommend a Reed tool for a particular job we know it will perform efficiently—because it has been thoroughly tested in the laboratory and following this the tool is given the supreme test of all, that of actual field conditions.



Model 26
Reed Rock Bit

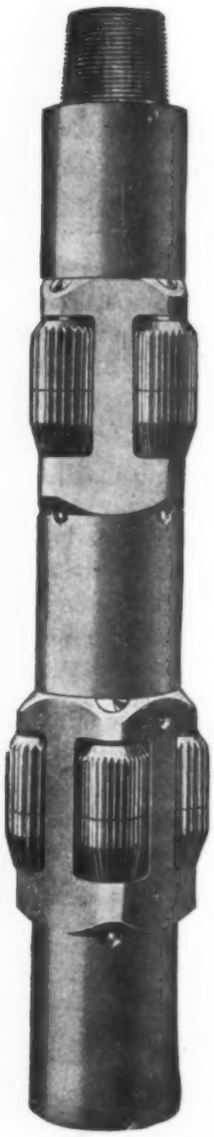
For Cutting Hard and Semi-Hard Formations

We believe that the Model 26 Reed Rock Bit is the most effective rock-cutting tool to be had today. Its twisting, cutting action literally tears its way through even the hardest rock.

It embodies in design the very latest, tested ideas in rock bit construction—cross cutting action; slush lubrication; quick cutter change; detachable head; 4-point reamer; threaded collar; ample long space; large slush passageways; greater speed; longer life; effective in both hard and semi-hard formations.

Houston REED ROLLER BIT CO. Los Angeles

REED ROTARY DRILLING TOOLS
SPEED - ECONOMY - DURABILITY



Materials which go to make up Reed Tools are of a composition which has been found superior to others for oil field work. Steels are made to order of an analysis specified by us and when received are checked in our laboratory.

Regarding heat treatment, Reed tools receive the utmost in consideration. Our metallurgists and heat treaters are ever watchfully on the job.

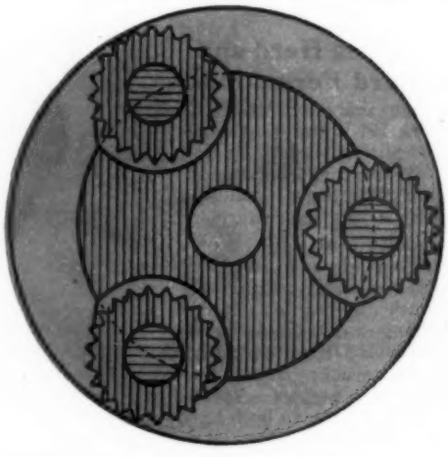
Furnaces are of the latest design. For increasing quality and dependability to an even greater degree, a large hearth type of electric furnace has recently been installed. Temperature measuring instruments are the most accurate and of the latest design. These regulate automatically the temperatures of the work in the furnaces to a plus or minus five degrees. Control is absolute.

In testing the treated product, machines according to the best metallurgical practices are used. Each and every unit is inspected and tested. Rigid standards are mercilessly adhered to. Thus when a Reed Tool is received in the field the utmost in performance is assured.

Reed Double Three-Point and Four-Point Reamers

Every user of disc bits knows how quickly the hole loses gauge. Often in a very few feet an eleven-inch hole becomes a ten-inch hole. Here is where Reed Reamers do their best work. The tapered reamer cutters pick up where the worn discs leave off and quickly and efficiently bring the hole up to full gauge with no necessity for after reaming. This combination also, by providing a long, stiff rigid member with many points of contact, does away with crooked hole troubles, and there is no worry with casing in a hole that is straight and full gauge.

They Do Away with Tight Hole Trouble



Houston REED ROLLER BIT CO. Los Angeles

REED ROTARY DRILLING TOOLS
SPEED · ECONOMY · DURABILITY

The Reed Wire-Line Bit

This tool has a real idea behind it—the saving of 50% or more of the time now spent in going in and out of the hole, in order to replace dull bits. It does away with the need for pulling the drill stem every time it becomes necessary to put on a sharp bit. When bits wear they can be easily and quickly replaced with little loss of drilling time. There is, therefore, no reason or inclination on the part of the driller to force a dull bit. It is possible to change blades at 5,000 feet depth in 45 minutes. By means of a circulating head, rotation and circulation may be kept up, if necessary, while bits are being changed.

Designed to operate on a wire line, either through upset drill pipe—equipped with full-hole tool joints—or on straight drill stem with collar. Has proven its merit in hundreds of cases. Where many varying formations are encountered within a short distance, this bit shows up to best advantage.

A coring attachment, manufactured for use with this bit, permits frequent and easy taking of cores, with little loss of time. This attachment operates through the drill pipe, and cores may be taken as easily as blades are changed.

On more than one occasion, the Reed Wire-Line Bit has paid for itself in its saving in the drilling of one well.

Reed Rotary Drilling Tools

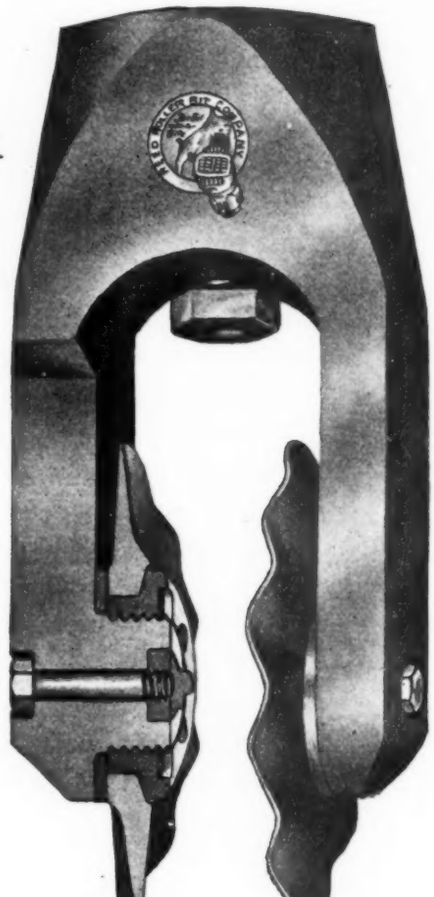
Reed Rock Bits
Reed Reamers
Reed Wire-Line Bit
Reed Disc Bits and Reamers
Reed Coring Tool
Reed Milling Tools
Reed Fishing Tools
Reed Rotary Under-Reamer
Reed-Winger Overshot
Reed Reversing Tool
Reed Tubing Drain Standing Valves

We are distributors for the Martin-Loomis Weight Indicators east of the Rocky Mountains.

Houston REED ROLLER BIT CO. Los Angeles

REED ROTARY DRILLING TOOLS
SPEED · ECONOMY · DURABILITY

REED DISC BIT *and* REAMER



The New REED Disc Bit Reamer

Can be used in combination with any Disc Bit *alone*—
or with any other Reed Reamer

A hard-to-beat combination for the speedy drilling of straight, full-gauge holes. Disc Bit head made with one piece leg and pin—strong, with plenty of hole clearance. Bushed water hole. Corrugated discs that are geared to the hole. Locking device that can't shake loose. Offset locking bar gives 16 adjustments, insuring a tight joint between bushing and washer. This construction insures against loss of cutters, bad fishing jobs and excessive leg wear. Manufactured under the Holdaway Patents.

Can be used with single, double or tandem formations or Reed Reamers, which bring the hole back to full diameter regardless of disc wear.

Houston REED ROLLER BIT CO. Los Angeles

straightening frame, with both units rigidly bolted together.

The control valve is operated by means of a rod which runs the entire length of the straightening frame and the operator may stand at any point along the frame to sight his pipe. The ram, driven by a three-throw, high speed pump, will exert an approximate pressure of 100 tons, and will travel at a speed of 90 inches per minute. The return stroke of the ram is actuated by a counterbalance which can be regulated to reduce the ram travel to a minimum and thereby greatly increase the speed of operation. All pipe rollers with the exception of the two directly under the ram, are equipped with ball bearings.

The pump is driven by a 10-horsepower electric motor. The liquid circulates through a closed system.

Additional information on all these items will be furnished by the company, upon application.

J. H. DRILLING MACHINE

J. H. Drilling Machine
ALAMO IRON WORKS

The Alamo Iron Works, San Antonio, Texas, has announced a simplified rotary drilling machine to be known as the J. H. Well Drilling Machine.

The machine consists of a 30-foot ladder derrick, draw works, eight or 12-inch rotary and 5⅞-inch by eight-inch geared Simplex slush pump mounted on a portable steel frame. Power can be obtained from any gas engine, Fordson, oil engine or electric motor, or a self-contained machine with a 12-horsepower mounted gasoline engine is obtained by a two-foot extension of the frame shown.

Operating levers are within the reach of one operator and all clutches including the pinion gear driving the draw works are on one shaft, making the machine compact.

The ladder derrick is hinged at the bottom for raising or lowering and by anchoring one end of the cable to the pump end of the frame, the derrick can be raised by hand into position by one man at the 24 by six-inch fly wheel pulley. The derrick is held in position by two wood braces anchored to the steel frame and by four guy wires from the top of the derrick.

On the rotary pinion shaft is mounted a cathead for light hoisting.

The rotary has a renewable dust and dirt proof ball bearing thrust.

The rotary and pump are driven by steel roller chains onto steel sprockets with cast iron hubs. The Simplex pump is totally enclosed and designed especially for slush pumping, but can be used successfully for any heavy duty pumping.

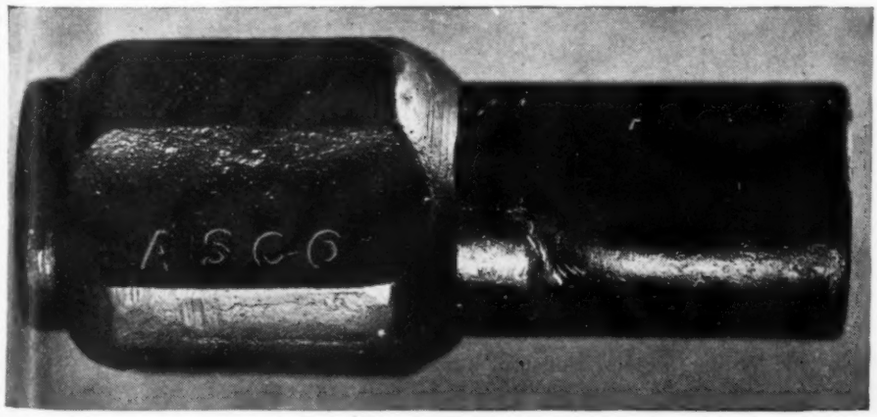
The capacity of the pump is 150 gallons per minute at 80 strokes per minute and it can handle a maximum working pressure of 300 pounds per square inch.

All valves are interchangeable and renewable by loosening one nut and removing the valve clamp and guides. A cast iron reliner, bored for either 4½ or five-inch diameter inside packed piston or self-expanding pressure piston is held into position by two liner jack bolts screwed through the cylinder head.

The stuffing box is enclosed but easily accessible by means of a sliding cover.

The pump is furnished with a three-inch suction and a 2½-inch discharge reduced to 1½-inch and piped to about the middle of the 30-foot derrick. A gate valve is provided to vary the discharge.

Additional information can be obtained from the Alamo Iron Works, San Antonio, Texas.



AMERICAN SUPPLY COMPANY SUCKER ROD GUIDE

New Sucker Rod Guide
AMERICAN SUPPLY COMPANY

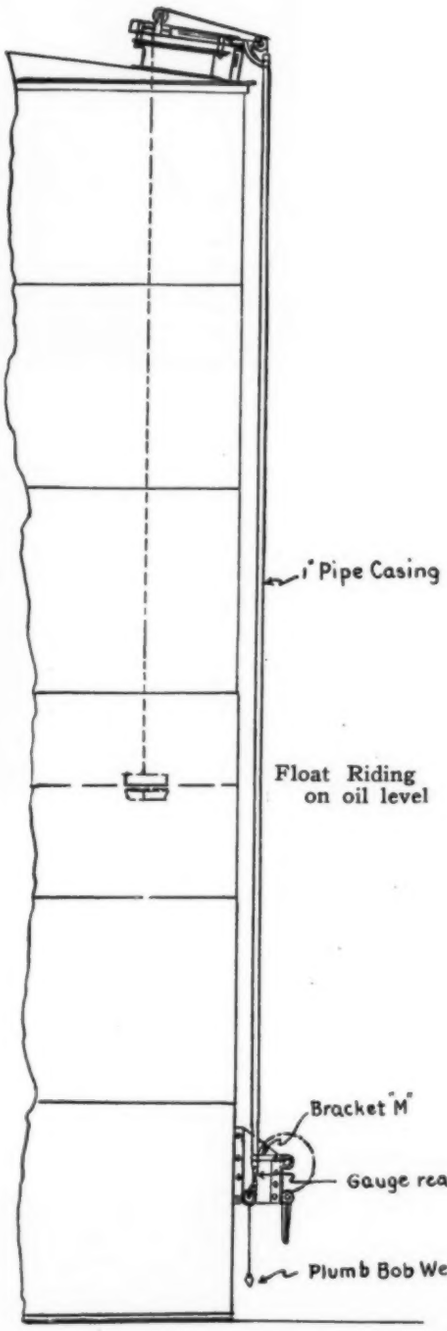
American Supply Company, Mexia, Texas, announces the new ASCO Sucker Rod Guide.

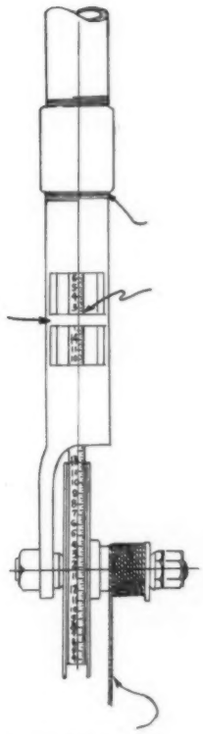
Manufacturing details are described by saying that the guide is cast around the sucker rod coupling, allowing for firm and durable attachment. Ample clearance is built into the guide to permit the passage of fluids during pumping operations.

The manufacturer states that his company will be in position to market these guides already cast onto standard couplings and that the complete string of couplings and guides can be delivered to producers. Couplings which come with the string of sucker rods will be taken in on the delivery of similar couplings to which the guide is attached. This will enable the manufacturer to sell only the guides, using the new couplings which the purchaser has to replace the couplings on which the guides are cast. The company will also be in position to cast these guides on couplings furnished by oil companies.

Further information can be had by writing the American Supply Company, Mexia, Texas.

Safety, Reliability and Economy of Time with the "Sure Shot" Automatic Tank Gauge





Close-Up View of Reading Gauge

This new innovation in tank gauges has been given exhaustive tests and trials, and is now being installed by many of the largest companies.

The meter gauge can be read quickly and in safety from the ground.

We will gladly furnish you with complete information on this new safe and sure device.

Harrisburg Pipe & Pipe Bending Co.
of Texas, Inc.

Sawyer and Winter Streets, Houston, Texas.

Harrisburg Supply Co., 213 E. 1st Street, Tulsa

GUARANTEED WHIPSTOCKS

The hinged self-locking Kinzbach whipstock is GUARANTEED. It is the invention of Frank Kinzbach, widely known in and closely associated with the oil producing business.

This is a whipstock that saves the well by making possible a side-tracking job at an angle and keeps the hole in alignment. It gets to the bottom without the top being broken—a whipstock that locks itself in place.

The Kinzbach whipstock by reason of its hinge, automatically slips into position, the top of the whipstock being forced against the casing so as to permit the reaming tool to mill out in 8 to 10 feet.

The whipstock is made of cast steel—no danger of breaking, as is the case with the old-fashioned cast iron whipstock.

It is made in three sizes—six, eight, and ten inch. Outside diameter ranges from 5½ inches to 9½ inches. Overall Length 19 feet, 11 inches. Length of taper 14 feet.

♦ ♦ ♦

Order this whipstock, and if, after using it you do not think it worth its price, bill us for the difference between its price and that of an ordinary whipstock made of the same material, and our check will come by return mail.

CASING SHOES

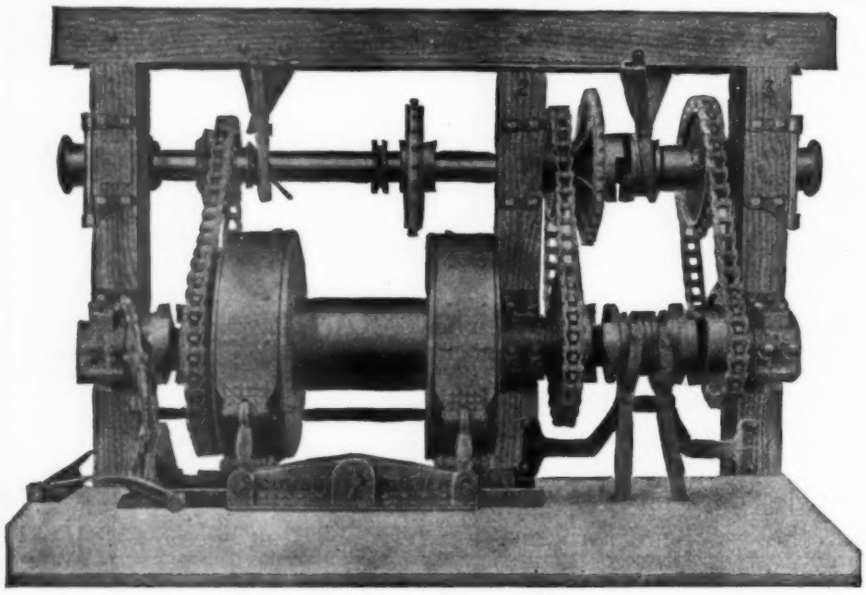
Made from Heat-Treated Forged Steel, carefully machined and free from forging strain. The steel in these casing shoes will develop the best physical properties obtainable.

Harrisburg Pipe & Pipe Bending Co.

of Texas, Inc.

Sawyer and Winter Streets, Houston, Texas.

Harrisburg Supply Co., 213 E. 1st Street, Tulsa



GUMBO BUSTER MODEL 78A DRAW WORKS

Gumbo Buster Items
REPUBLIC SUPPLY COMPANY

The American Well & Prospecting Company, Corsicana, Texas, builders of Gumbo Buster rotary machinery which is distributed by the Republic Supply Company, have added several new pieces of equipment to its line during the past few months. The new items give the company a complete outfit capable of drilling 6000 feet.

Draw Works

The Gumbo Buster Model 78A is the new three-speed draw works.

The seven-inch line shaft and the eight-inch drum shaft are forged from special alloy steel. Shafts are placed as close together as possible and are mounted in large boxes which are securely bolted to hardwood posts. The posts are 10 inches wide by 14 inches deep.

The spool on which the wire rope is wound is 20 inches in diameter and is machined throughout.

All clutch blocks and sprockets are made from chrome nickel cast electric steel.

Each clutch block is keyed on the shaft with two large keys and is operated by a conveniently located foot pedal. The sprockets revolve on large phospher bronze bushings and are accurately machined throughout with the exception of the teeth, which are ground smooth.

The brake system has been strengthened and improved. The solid asbestos brake bands are 12½ inches wide and are of a larger diameter than used before. By means of a very simple system of compound levers the force exerted on the brake handle by the driller is increased approximately three times over what it was in the old type of brake. The entire brake system is mounted in a channel iron base which facilitates tearing down and setting up, and assures all moving parts of the system being in line.

The draw works is oiled with conveniently located Alemite tips.

Eight-Inch Swivel

The Gumbo Buster eight-inch swivel is large and is designed for use on wells of any depth up to 6000 feet.

The bearing used in this swivel consists of 20 cones and two plates and is approximately twice as large and strong as the bearing used in the six-inch swivel. The complete bearing weighs 400 pounds. The cones and plates are case hardened and are accurately ground to size.

The swivel stem, the swivel trunnion or body, the swivel bail and all parts that carry the weight are made from steel castings or steel forgings, and are large enough to carry with safety 6000 feet of drill pipe.

The swivel bail is held in the correct position when the grief joint is in the rat hole by a very simple device which has been incorporated in the construction of the swivel. The ears, which are forged on the bail, strike the lugs, which are cast on the trunnion or body of the swivel, and hold the bail in an upright position.

The water course in this swivel is three inches in diameter. This feature tends to increase the life of the parts with which the fluid comes in contact because it decreases the velocity or speed at which the fluid goes through the water course, thereby decreasing the cutting action of the fluid.

All packing glands are large and deep and are easily accessible.

New Crown Block

The new crown block which is designated as Russian Model B, can be furnished with either Alemite oil Timken roller bearings or self-aligning bronze bushings.

The sheaves used in this crown block are 30 inches in diameter and are made from heat treated chrome nickel steel, or from plain steel if desired. The sheaves are so arranged on the I-beams that they can be mounted on a derrick with only a five-foot square opening in the water table. The grooves in all of the sheaves are machined in accordance with A. P. I. standards.

Extra heavy 12-inch I-beams are used. The beams are securely bolted together, but are so constructed that they can be taken apart and placed on top of the derrick in two separate pieces.

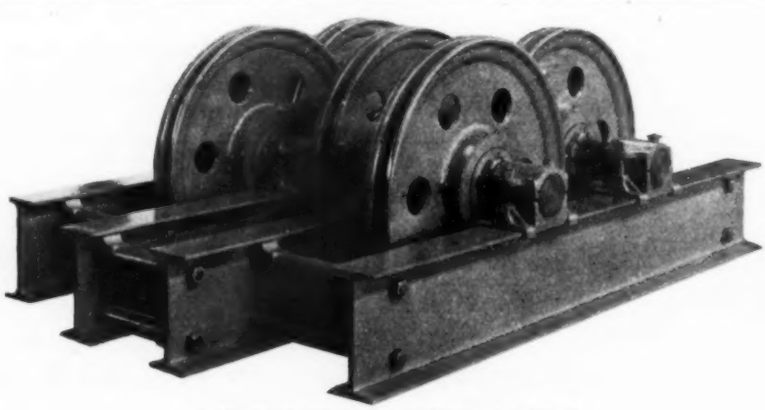
In order to eliminate the hazard of any part of the block breaking or coming loose and falling on the workman below, all parts are made of steel and all bolts and nuts are held in place by cotter keys.

EIGHT-INCH SWIVEL

Roller Bearing Traveling Block

The Gumbo Buster 66-inch Roller Bearing Traveling Block is strong and heavy. With the three-speed draw works now in use the extra weight and roller bearings are an advantage, as they increase the speed with which the block will run down from the top of the derrick.

The sheaves are 36 inches in diameter,



RUSSIAN MODEL B CROWN BLOCK

BUDA

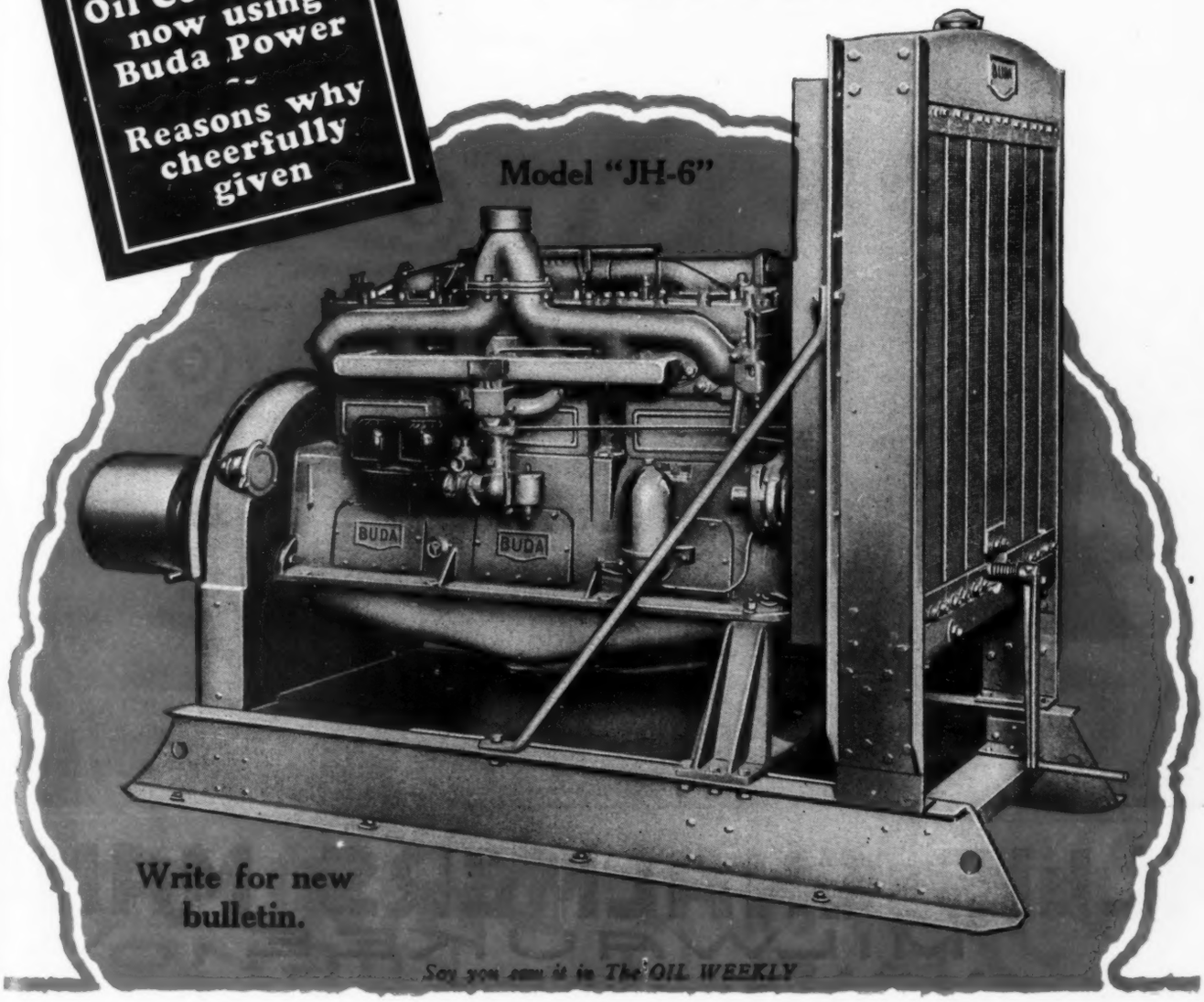
the oil field power

for operating Compressors—Gas-Air Lift and other heavy continuous duty equipment. Made in 75-5-135 H. P. sizes—for operation with gasoline or natural gas. Adapted to either stationary or portable installations and for any type of drive.

Over 60 Oil Companies now using Buda Power

Reasons why cheerfully given

THE BUDA COMPANY
Harvey (Suburb of Chicago), Ill.
Tulsa, Okla. 311 E. 2nd. St.



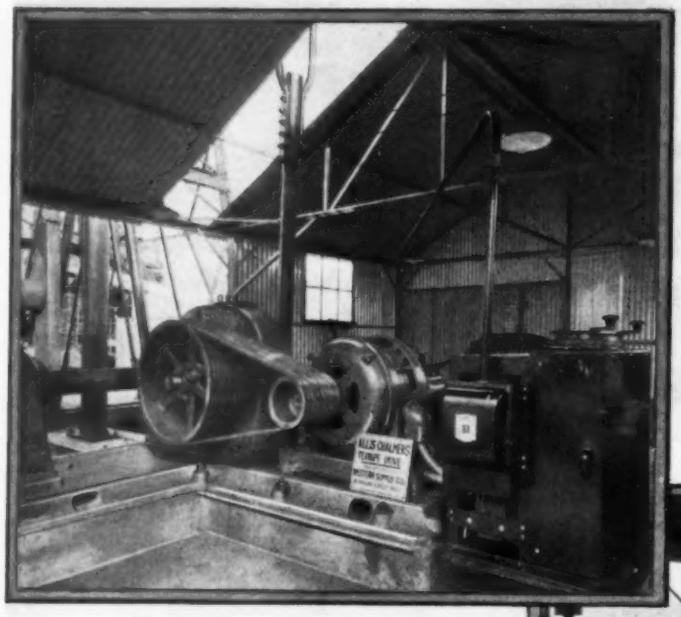
Write for new bulletin.

Say you saw it in The OIL WEEKLY

ALLIS-CHAL

at the recent

International Petroleum



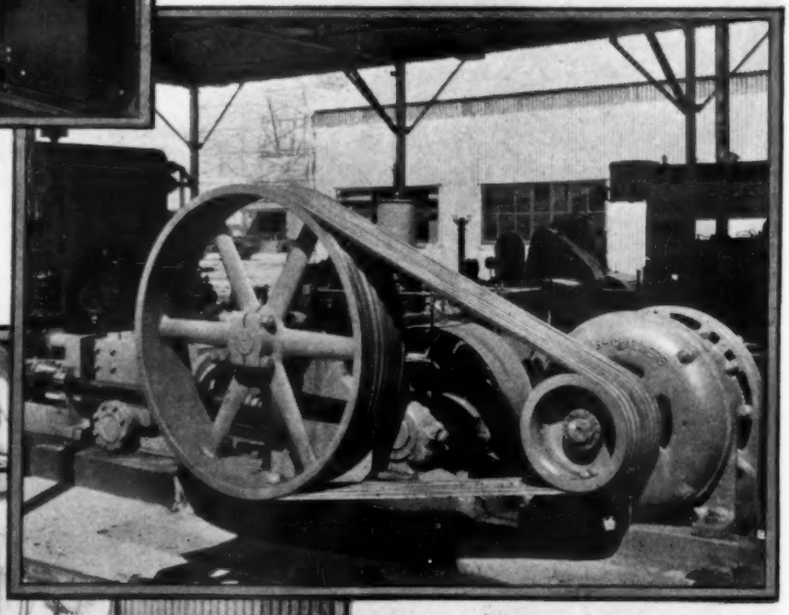
MOTORS *of*

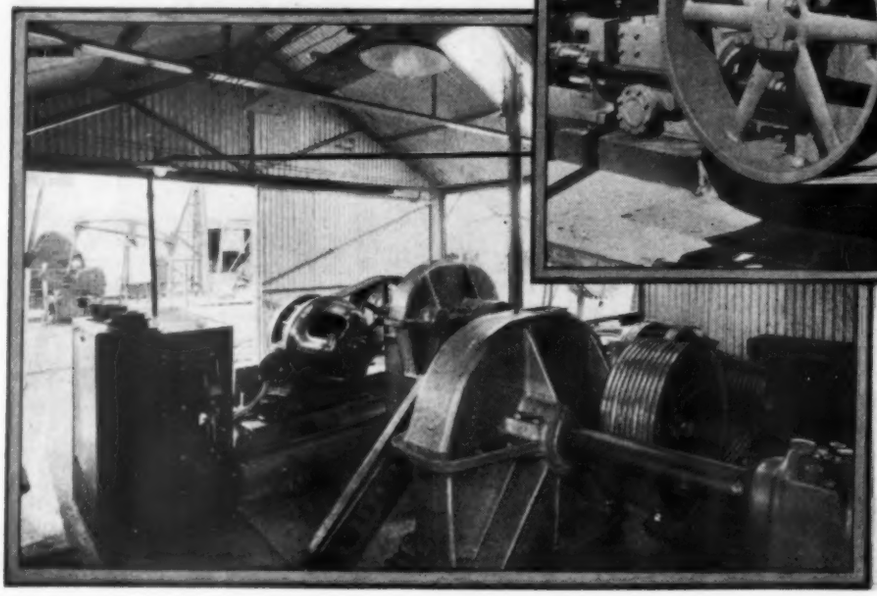
Unusually High Efficiency

Rugged Construction
Steel Frame

Infrequent Lubrication
Roller Bearings

Exceptional Pull-out Torque





OIL FIELD OFFICES AT

DALLAS — DENVER
LOS ANGELES — HOUSTON
SAN FRANCISCO — KANSAS CITY
NEW ORLEANS — EL PASO

WESTERN SUPPLY COMPANY
TULSA, OKLAHOMA

District Offices in All Principal Cities.

ALLIS-CHALMERS MANU
MILWAUKEE, WIS

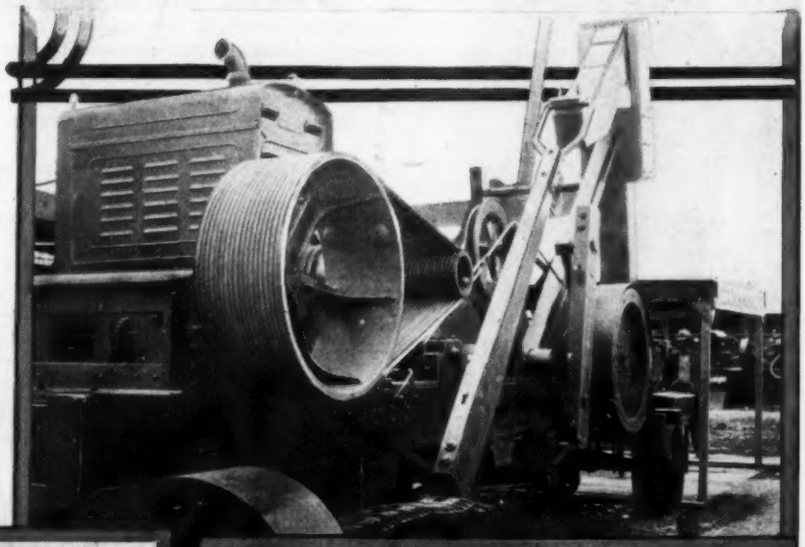
Say you saw it in The OIL WEEKLY

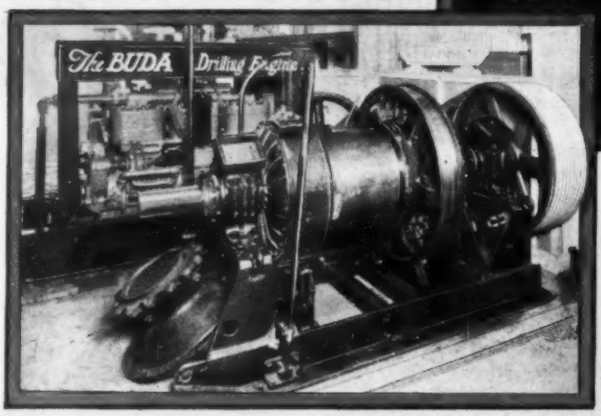
MERS

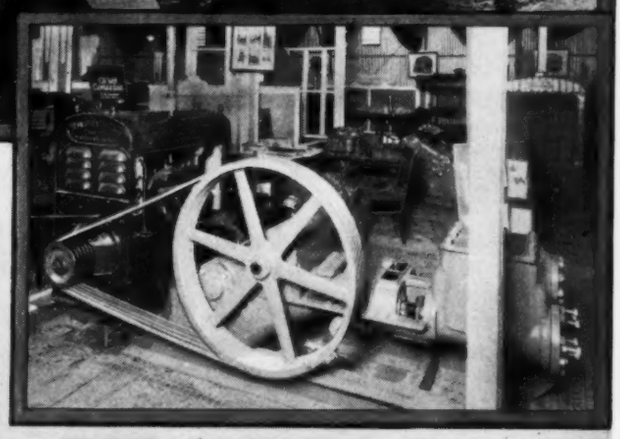
Exposition

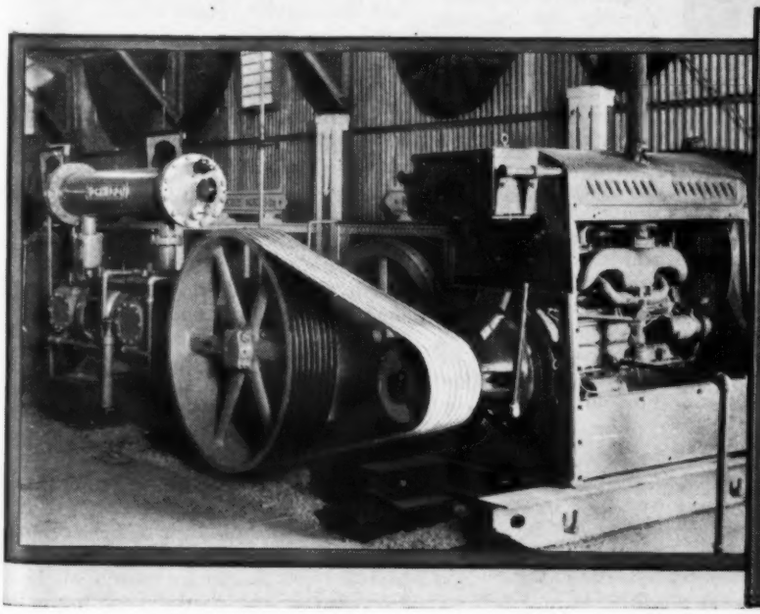
TEXROPE DRIVES
An Outstanding Feature

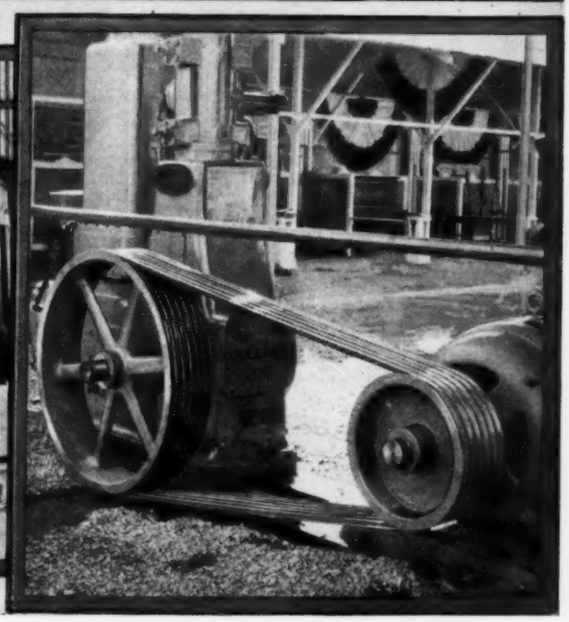
These views, taken at the exposition, illustrate a few of the many applications of Texrope Drives to equipment used in the Oil Industry.











NUFACTURING COMPANY
WISCONSIN. U.S.A.

Say you saw it in The OIL WEEKLY

GUMBO BUSTER ROLLER BEARING TRAVELING BLOCK

and the sheave grooves are accurately machined.

The hardened and ground center pin, which is seven inches in diameter, is set above the center line of the block, causing the block to hang in an upright position when in use.

The roller bearings are large in size and each bearing is oiled with cup grease that is forced through an individual oil hole by the Alemite system.

The wire line guard is made from cast electric steel and is so constructed that it can be quickly removed and replaced without unstringing the block.

All projecting nuts are guarded or tapered to prevent them catching the pipe racked in the derrick or other projecting surfaces.

New 20-Inch Rotary

In the new 20-inch rotary, the table is a single chrome nickel steel casting.

The make up feature is accomplished by the use of a lower lifting ring which goes through the opening in the rotary table and rests on the bed plate. The section of the bed plate upon which the lifting ring rests is built up so that the lifting ring and slips are in a convenient working position. In case the purchaser does not want the make and break feature, the rotary may be purchased less the lower lifting ring, but if the make and break feature is ever desired the lower lifting ring can be obtained.

In this new rotary the lifting rings, or master bushings, are made long in order to completely back up the new style long slips now in use. This prevents the thin bottom ends of the slips from protruding below the bottom of the lifting ring and breaking off.

The pinion is a heavy steel casting and is securely fastened to the pinion shaft. The pinion shaft is large in size and runs in two extra long bearing boxes which are equipped with removable bronze bushings. Each bearing box is also equipped with a large oil reservoir and two ring oilers.

Further information can be had from the Republic Supply Company, Houston, distributors, or the American Well & Prospecting Company, Corsicana, Texas.

Anti-Friction Tool Joint

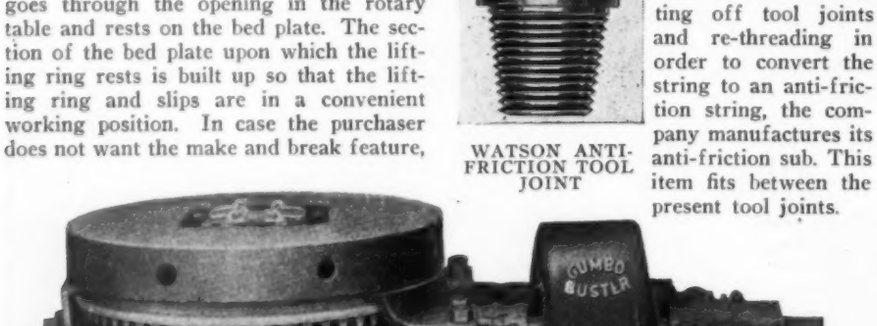
GEORGE D. WATSON COMPANY

To overcome excessive friction difficulties in rotary drilling, George D. Watson Company, Cabrilla and Border Streets, Torrance, California, has introduced an anti-friction tool joint.

In this joint a manganese-bronze collar is fitted into a recessed portion of the tool joint on a loose or "sloppy" fit, allowing it to revolve freely around the tool joint. The collar is four inches wide on a four-inch tool joint, and in proportion on other sizes. It is slightly larger at its outside diameter than the tool joint, therefore being the only part of the string to come in contact with the well casing or the wall of the hole.

WATSON ANTI-FRICTION TOOL JOINT

Where the operator desires to avoid cutting off tool joints and re-threading in order to convert the string to an anti-friction string, the company manufactures its anti-friction sub. This item fits between the present tool joints.



GUMBO BUSTER 20-INCH ROTARY

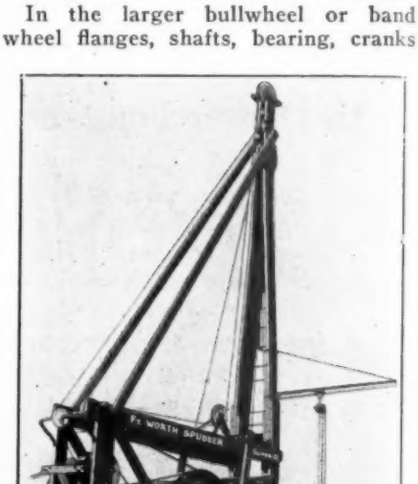
Super "D" Spudder

FORT WORTH WELL MACHINERY AND SUPPLY COMPANY, INC.

The Fort Worth Well Machinery and Supply Company, Inc., Fort Worth, Texas, is now marketing the Super "D" Fort Worth Spudder.

The new machine has been enlarged in all essential details, making a much stronger outfit than the old spudders.

In the larger bullwheel or band wheel flanges, shafts, bearing, cranks and crank pins, from 50 to 70 per cent, more strength has been achieved.



SUPER "D" SPUDDER

Friction has been cut to the minimum by heavier and improved castings on heavier clutch shaft.

The spudding clutch has special adjustable features, and the hoisting clutch has been improved.

The hoisting sprockets now make possible two forward and two reverse speeds.

Back end spudding and sand line sheaves have been enlarged and improved.

The main spudding sheave is larger and has a considerably larger pin, with longer side plates and a larger pin in the eye bolt, than the old spudder.

The mast is reinforced with special timbers which sustain the bottom pin at the right distance from the main uprights of the derrick.

The spudding beam cross shaft is larger with special arrangements for holding the shaft in place.

Special dividing blocks between the bearings on the main sills with steel plates, have turned up ends with holes for double ended adjusting bolts between the bearing plates.

Bearings and loose running sheaves as well as the clutch hubs and the truck wheels are equipped with the Zerk system of lubrication.

Additional information will be mailed upon request to the company.

THE NEW FOMON CONTINUOUS FOAM GENERATOR

Available in various sizes and capacities.

Designed for the continuous production of foam produced by by the combination of two separate dry chemicals with water.

The generator hooks right into the hose line, operating with the ordinary water supply and standard hose lines, attaining an effective range of foam stream of well over 100 feet when using lengths of hose up to 150 feet on the discharge side of the generator.

Operation may be easily maintained by one man, who acts as both feeder and operator.

Chemicals used are packed separately in twin metal containers as safeguards against possiblity of deterioration. Containers are crated together so as to pour with one operation.

Chemicals are 100 *per cent foam producing* as segregation of the chemicals in twin containers obviates the necessity of inert "filler" material to prevent deterioration.

Demonstrated at the recent International Petroleum Exposition without a failure—extinguishing very difficult test blazes in the record times of from 23 to 50½ seconds.

Adequate stocks of Fomon chemicals and equipment are maintained at convenient distributing points throughout the United States.

We handle a full line of other fire equipment

AMERICAN FOMON CO.

Incorporated

ROOM 1005 Drexel Building PHILADELPHIA, PA.

A FOLDER YOU SHOULD HAVE IN YOUR FILES (containing complete data on Fomon Fire Equipment) MAY BE FILED UNDER ANY OF FOUR HEADINGS.

( ) Red File Folder
( ) Complete Literature
( ) Prices and special data about Continuous Foam Generators.
( ) Prices and special data about Fomon foam stabilizer.
( ) Descriptive folder about Generators
( ) Descriptive folder about foam.
( ) Descriptive folder about Fire Extinguishers.
( ) Copies of special reports on FOMON equipment.

AMERICAN FOMON COMPANY:
Please send me information as checked to the left.

Name . . . . . .
Company . . . . . .
Address . . . . . .
City . . . . . .
State . . . . . .

SERVING WEST TEXAS

Electric Power Users:

Humble Pipe Line Co., Albany
Denny-Andrews Power, Putnam
Acme Pipe Line Co., Albany
Marland Pipe Line Station, Albany
Texas Power Co., Blake Pool
Humble Pipe Line Station, Pioneer
San Angelo Refining Co.
Amerada Corp. Power, Burkett
Acme Tool Co., Cross Plains
Western Carbon Black Co., Pioneer
Phillips Recovery, Sedwick
Phillips Petroleum Co., Trent
Marland Oil Co., Trent
Mid-West Exploration, Trent
Illinois Pipe Line Co., Yates Pool
T. & P. Coal & Oil Co., McCamey
Magnolia Pipe Line Co., Throckmorton
Humble Pipe Line Co., McCamey

—38 COUNTIES

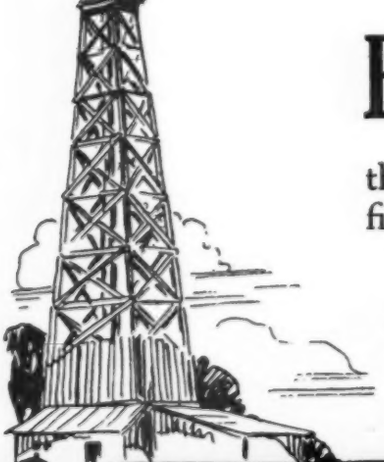
in West Texas are receiving uninterrupted electric service from the West Texas Utilities Company.

—100 "CENTERS"

of distribution give convenient contact, and maintain the high standards of service which make electric power the most dependable in the oil industry.

—1250 MILES

of "high lines" have been built during the past three years to carry this most convenient and economical power to the principal fields in this territory.

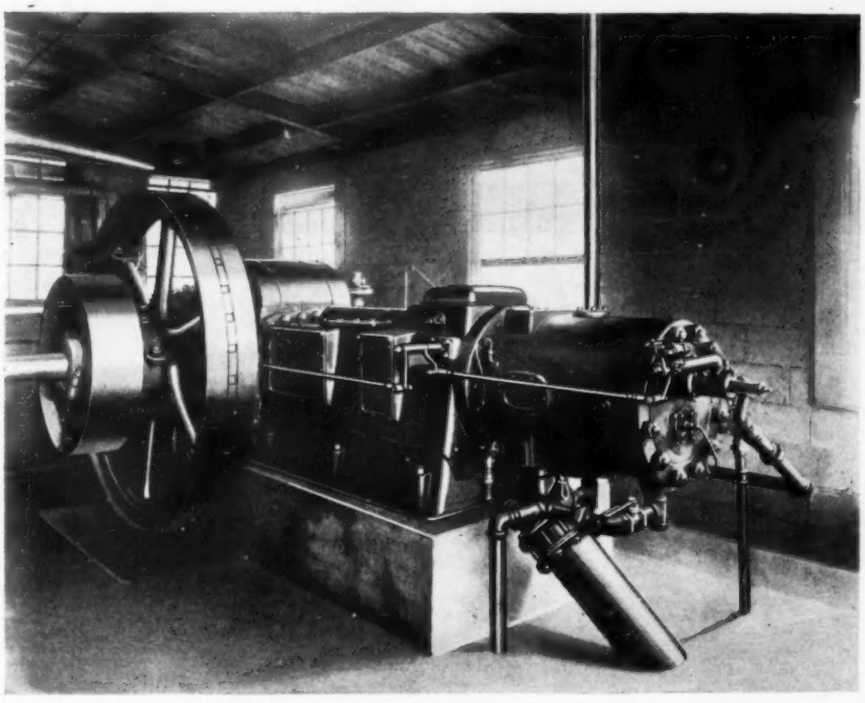


ENGINEERS of the West Texas Utilities Company have been pioneers in developing electrically driven machinery adapted to the usage of the oil industry, and have proven its worth in actual field tests under all conditions.

Let them help YOU solve your "power" problem

WEST TEXAS UTILITIES COMPANY
ABILENE, TEXAS

Say you saw it in The OIL WEEKLY



BESSEMER MECHANICAL GAS INJECTOR

New Bessemer Products

BESSEMER GAS ENGINE COMPANY

During the year, the Bessemer Gas Engine Company, Grove City, Pennsylvania, has brought out a number of new products which are of interest to oil producers.

A new gas engine has been developed to meet the growing demand for reliable four-cycle oil field power plants.

In general design and construction, this four-cycle power plant is similar to the well known Bessemer two-cycle oil field engine. Duplicate parts are used wherever possible and the four-cycle engine has been so designed that the main frames, fly wheels, main bearings, crossheads and connecting rods are interchangeable with those of the two-cycle engine.

The power cylinder, valves, valve gear, mixing valve and governor, however, are designed specifically for four-cycle operation.

The bed plate of the four-cycle engine is of the enclosed type with bored crosshead guides and openings are provided to permit easy access to the enclosed moving parts.

All bearings and bushings are oversize to insure long wear with freedom from adjustment, and all bearings are adjustable.

The crankshaft is oversize and is fitted with counter weights.

The crosshead is adjustable and consists of a steel casting fitted with bronze shoes. Access for adjustment is made through openings with removable covers in each side of the bed casing.

The valve mechanism is unusually simple. The valves are operated by means of rockers fitted with rollers which are actuated by push rods which receive their motion from a single cam. Both inlet and exhaust valves are mounted in cages with the exhaust valve cage being completely water jacketed.

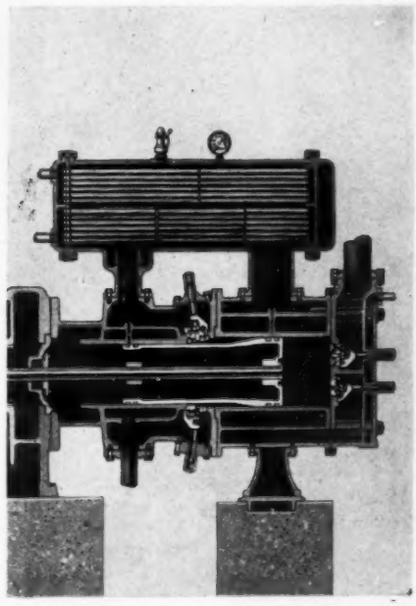
Bessemer Gas Economizer for Two Cycle Engines

Another new development is the perfected mechanical gas injector device for two-cycle power plants. This device, known as the Gas Economizer, makes possible four-cycle fuel economy and permits the retaining of the simplicity characteristics of the two-cycle engine.

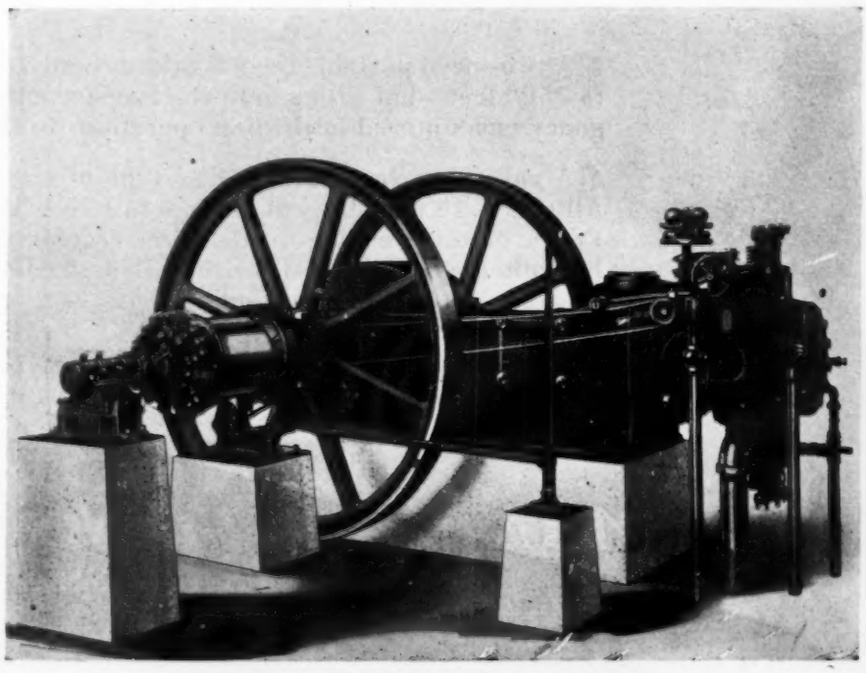
The principle of operation is as follows. Instead of taking the gas through the mixing valve into the combustion chamber through the inlet port, the gas is injected to the combustion chamber through a valve in the cylinder head. This valve is operated from an eccentric mounted on the crank shaft by means of a push rod and rocker arm and cam device. The valve is so timed as to inject the correct amount of gas at the exact point in the stroke, which assures the greatest fuel economy and engine efficiency.

The entire assembly can be attached to any Bessemer two-cycle engine of the enclosed type now in service without necessitating any major changes in the equipment. The Bessemer Gas Economizer is now available as optional equipment on all Bessemer Type 10 Compressors and can

(Continued on page 69)



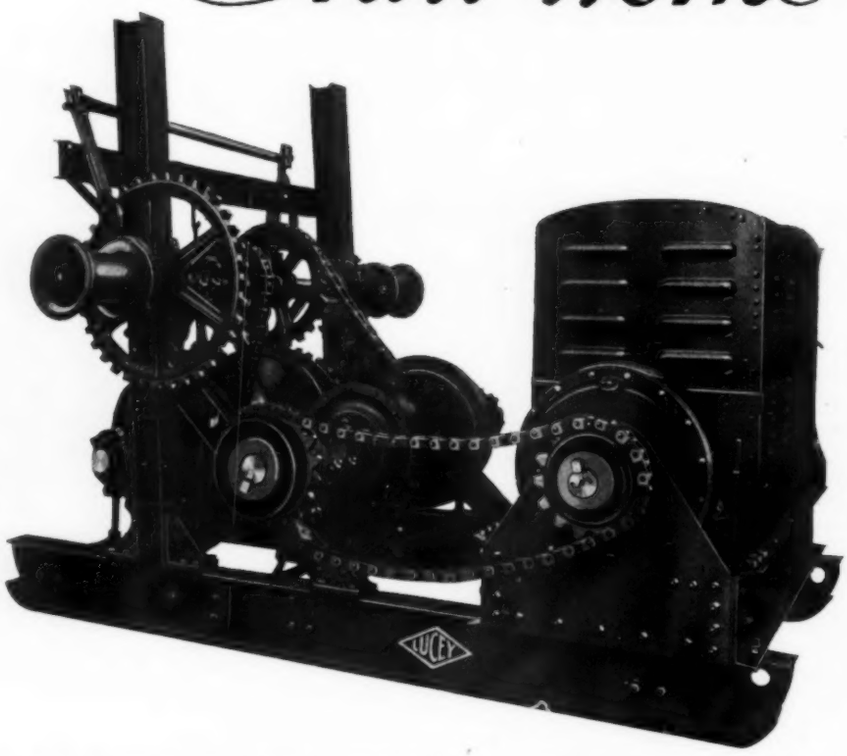
BESSEMER SINGLE ACTING TWO-STAGE COMPRESSOR CYLINDER, SECTIONAL VIEW



BESSEMER GAS ENGINE FOR POWER PLANTS

LUCEY

Lucey Portable Draw Works



¶A two-speed portable Draw Works designed primarily for depths to 2500 feet—but with ample reserve strength to meet any emergency encountered in drilling operations to this depth.

¶A roller bearing multiple disc type of reverse clutch is used. All gears are machine cut and operate in bath of oil. 100 Horse Power gasoline engine furnished as regular power equipment—but other sizes can be furnished if desired.—Also adaptable to Electric Motor or Steam Engine Drive.—

¶Made to A. P. I. Standards and Specifications.

Write for Descriptive Bulletin

LUCEY MANUFACTURING CORP. of TENNESSEE.
Chattanooga Tennessee.

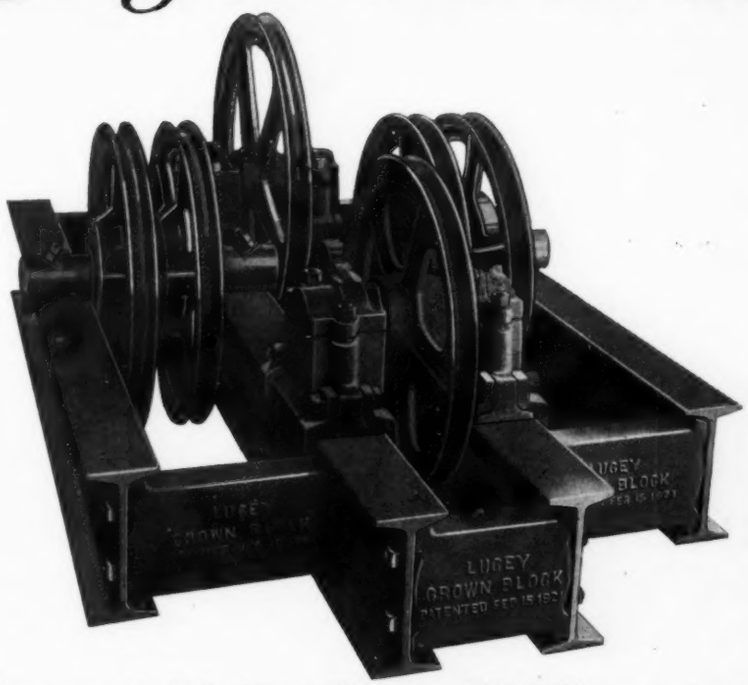
SALES DEPARTMENT:
LUCEY PRODUCTS CORPORATION
EXPORT: 3505 Woolworth Building, New York, N. Y.
DOMESTIC: 224 East Brady St., Tulsa, Okla.
1515 East Seventh St., Los Angeles, Calif.

Wherever LUCEY there's Oil

PRODUCTS

Wherever LUCEY there's Oil

Lucey Crown Blocks



¶ Manganese A. P. I. Crown Sheave and Sand Sheave mounted in Lucey patented adjustable chain oiling boxes.

¶ Crown Sheave so placed that center of cable on the sheave falls exactly in center of the derrick.

¶ Timken Bearing Sheaves mounted on single shaft and fastened to Beams by standard hook bolts—assures extremely rigid block.

¶ Base of adjustable box is channel-groove machined to fit the beam so that positive alignment is certain.

¶ To adjust box,—it is necessary only to loosen two nuts and slide the box along the beam to position desired.

These and Other Features are Described in our Crown Block Bulletin

Lucey Distributors:

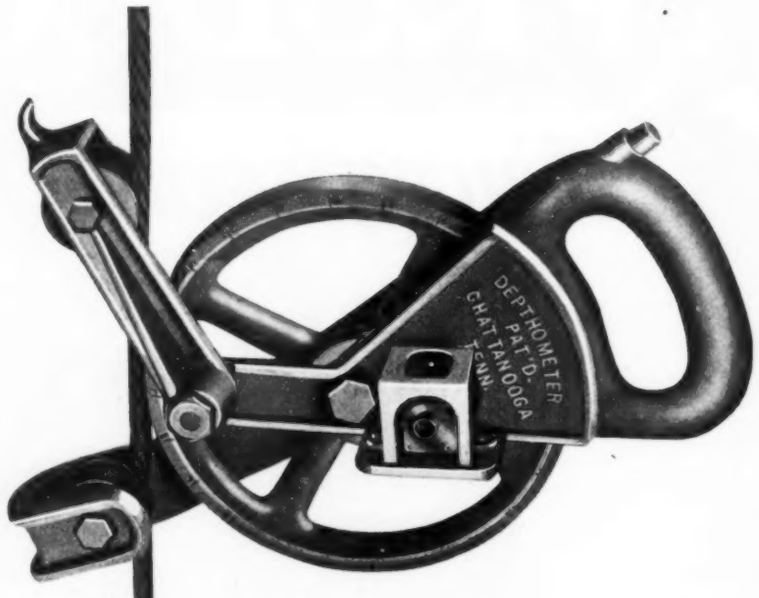
T. T. Word Supply Co., Houston, Texas · Bridgeport Machine Co., Wichita, Kansas
International Supply Co., Tulsa, Oklahoma
George J. Hausen, Inc., Los Angeles, Calif · Petroleum Equipment Co., Los Angeles, Calif.
Oil Well Equipment Co., (Lucey Boilers) Los Angeles, Calif.
Bradford Supply Co., Wichita Falls, Texas · Hercules Supply Co., Dallas, Texas

The Kieley Steam Boiler Fuel Governor

The Kieley Steam Boiler Fuel Governor regulates the flow of oil or gas in accordance with the variations in pressure and load conditions on the boiler.

The valve is adjusted by means of a spring and diaphragm. This balanced arrangement makes the valve very sensitive, and any changes in pressure are immediately compensated by the adjustment of the flow of fuel.

The Depthometer



Successful new instrument for quickly and accurately measuring the depth of oil and gas wells.

The Depthometer has proven most satisfactory and is now taking its place in the standard equipment of many of the largest producing companies throughout the world.

The machine is operated on the sand or bailer line, as shown, when the tools are being raised or lowered, without loss of time. Speedy, accurate and durable. Simple to operate.

For full particulars write The Lucey Products Corporation, or The Depthometer Company, Chattanooga, Tenn.

The above, as well as many other specialties, are being introduced to the Oil Industry by the

Lucey Products Corporation

224 East Brady, Tulsa, Oklahoma

1515 East 7th St., Los Angeles. Woolworth Bldg., New York City.

Lucey Rotary Drilling Equipment

Amsco Manganese Pulleys, Sprockets and Chains

PRODUCTS LUCEY CORPORATION

Baldwin Oil Field Chains

Copelin Core Drills

Pittsburgh Seamless Drill Pipe and Casing

be secured for installation on any of the enclosed case engines now in service.

Single Acting Two-Stage Compressor Cylinder

This new type cylinder, known as the Type SA-2, combines high and low stages in one cylinder which is but slightly larger than an ordinary single stage cylinder. In many features, this new compressor cylinder is identical with the standard Bessemer VH Cylinder but the arrangement of the cylinders and pistons is unique.

The suction line is connected to a flange at the top of the low stage head and opens into a passage into the intake valve chamber. After passing through the low stage cylinder, the gas being compressed is discharged into a passage way which conducts it around one side of the main cylinder barrel to a flange connection on top of the cylinder which opens into the interior cooler. From the interior cooler the gas enters a passage way in the top of the second cylinder, which conducts it to the high stage intake valve. It enters the high stage cylinder through this valve and after being compressed is discharged into a passage leading to a flanged connection on the bottom of the second cylinder casting.

The piston con be easily removed without dismantling the unit. All that is necessary is to take off the low pressure head only and disconnect the piston rod from the engine crosshead. Piston and rod may then be removed with no further dismantling of the unit. Another feature of this SA-2 Compressor Cylinder is the absence of high pressure piston rod packing. The low pressure cylinder being single acting, requires no packing, and the packing of the high stage is taken care of by the piston rings on the two ends of the piston. Any leakagle past these rings escapes either into the low pressure cylinder or into the space between the inner end of the piston and the engine bed, which is connected by a pipe to the low pressure suction. Low pressure piston rod packing is built into the flange between compressor and the engine bed to prevent leakage into the crank case of the engine, but this packing has to hold only a pressure equal to the pressure of the low stage suction chamber.

These new cylinders are built in a full range of sizes to cover all pressure conditions and are designed for direct connection to any Bessemer power unit and are interchangeable with the Bessemer VH Type of cylinders.

Further information may be had on all these products by communicating with the company.

CHAMPION FORGE BLOWER

Oil Field Forge Blower

CHAMPION BLOWER & FORGE COMPANY

The Champion Blower & Forge Company, Lancaster, Pennsylvania, announces a forge blower especially adapted to oil field work, called No. 30 Champion Direct-Connected Electric Blower.

Durability is said to be obtained in the machine through an unusually heavy shaft and long bearings.

The motor is enclosed.

The fan case is designed to give a high pressure and a volume of air sufficient to heat any size bit.

The outlet of the fan case has an opening 4⅞ inches, but an adapter is used on the outlet which has four-inch standard thread pipe connection; therefore either a three-inch or four-inch pipe can be used from the blower to the fire, as a reducer.

More detailed information will be supplied by the company on request.

GARDNER-DENVER PORTABLE AIR COMPRESSOR

Portable Air Compressor

GARDNER-DENVER COMPANY

The Gardner-Denver Company, formerly the Denver Rock Drill Manufacturing Company and the Gardner Governor Company, have added a line of portable air compressors in five sizes to their line of products.

The five sizes will meet all requirements within the scope of a portable. The following table shows compressor bore and stroke in each model:

Class 110, two cylinders, six-inch bore by 4½-inch stroke.

Class 160, two cylinders, 7-inch bore by six-inch stroke.

Class 220, two cylinders, 8-inch bore by six-inch stroke.

Class 250, two cylinders, nine-inch bore by six-inch stroke.

Class 310, two cylinders, 9¼-inch bore by six-inch stroke.

These units are powered by heavy-duty, four cylinder, Buda engines, Each size is rated at a generous margin above the compressor requirements. A high tension magneto with impulse starter, and a speed control governor are standard equipment.

Two cylinder, vertical, single acting "Gardner" compressors are used. Suction and discharge valves are of the Duo-plate type.

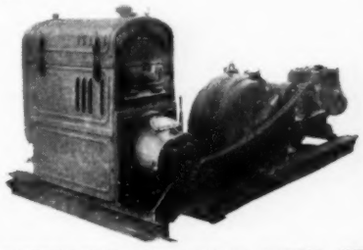
The engine drives the compressor through a flexible, quickly detachable coupling.

The frame is a single piece steel casting with the air receiver and gasoline tank mounted on an extension.

GARDNER-DENVER PUMPING UNIT, ENGINE DRIVEN

Grdned-Denver Pumping Units

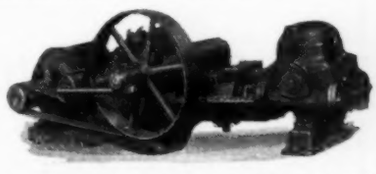
The Gardner-Denver engine-driven pumping units consist of a Gardner-Denver packed piston enclosed power pump direct connected through a flexible clutch coupling to a seven horsepower Witte engine of the throttling type. The outfit is mounted on a boiler plate base. The pump for the unit can be provided in several sizes.



GARDNER-DENVER PUMP WITH HERCULES ENGINE

Slush Pump

The Gardner-Denver 4½x10 booster slush pump is mounted on steel skids and is powered by a Hercules power unit. Power transmission is through a gear reduction and out-tooth sprocket pulleys. The same pump and power unit are also offered with Texrope drive.



GARDNER-DENVER MOTOR DRIVEN PUMPING OUTFIT

Power Pump

The Gardner-Denver enclosed power pump is equipped with idler arrangement for short belt drive from an electric motor.

All the pumps are of the enclosed, self-lubricating type.

Further information can be had from the company on request, by addressing The Gardner-Denver Company, Quincy, Illinois.

ATLAS SUPPLY COMPANY

DISTRIBUTORS OF

DEPENDABLE EQUIPMENT

❖ ❖ ❖ ❖

Oil and Gas Well Supplies
Refinery and Gasoline Plant Specialties
Wholesale Plumbing and Heating Supplies

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WEBER Two Cycle Oil and Gas Engines. Weber 15″ x 15″ Single Cylinder Oil Drilling Engine.

AMERICAN CABLE COMPANY
Wire Drilling and Sand Lines. "Tru-Lay" Preformed Rotary Casing Lines, Tubing and Sucker Rod Lines, Hoisting Lines.

GARDNER PUMPS
The Enclosed Type Super-Booster Mud Pump and Oil Line Pumps.

UNION STEAM PUMP COMPANY'S
Forged Steel Hot Oil Pumps, Centrifugals, and Specially designed Pumps for every service.

PITTSBURG STEEL PRODUCTS COMPANY'S
Seamless Steel Casing, Tubing and Drill Pipe.

CLAYTON MARK & COMPANY
Lapweld Casing, Tubing and Line Pipe.

TUBBS Pure Manila Bull Ropes, Cat Lines, and Plain Laid Rope.

POWELL Valves.

DARLING Semi Steel, Cast Steel and Forged Steel Valves.

MASON Pump Governors—Float Controls, Regulating Devices.

❖ ❖ ❖ ❖

BOSTON WOVEN HOSE & RUBBER COMPANY

Drilling Belt
Rotary Hose
Power Transmission Belt
Armatube Gasoline Hose
Air, Steam, Water and Welding Hose

GENERAL OFFICE
MUSKOGEE, OKLAHOMA

BRANCHES

OKLAHOMA		TEXAS	
Tulsa	Wetumka	Fort Worth	Borger
Earlsboro	Maud	McCamey	Vernon
Ada		Pyote	Breckenridge

Allis-Chalmers Products

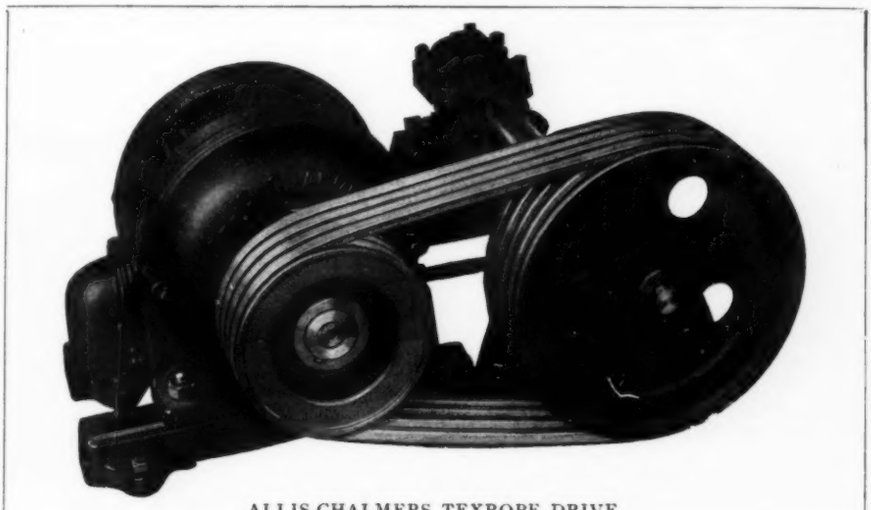
ALLIS - CHALMERS MANUFACTURING COMPANY

Allis-Chalmers Manufacturing Company, Milwaukee, Wisconsin, has developed a number of pieces of new equipment for use in the oil industry during the year.

Texrope Drive

The Allis-Chalmers Texrope Drive is an improved type of transmission apparatus designed to act as a driving medium between a prime mover and a driven unit at another speed.

The drive consists of two grooved sheaves and a number of especially constructed "V" type endless belts. The belts act as a cushioning or shock absorbing medium, as they stretch slightly and pull into the grooves gradually upon starting.



ALLIS-CHALMERS TEXROPE DRIVE

Allis-Chalmers Two-Speed Motor

The two-speed oil well motor has been developed in three sizes: 15/35, 20/50 and 25/65 horsepower, for both 50 and 60 cycle current.

The motor has cast steel frame with integral feet. Ample ventilation has been provided.

Extra insulation between phases on the rotor, mica under slip rings and on leads, all insulation securely held in place, stator coils thoroughly insulated before being placed in slots, and both units dipped and baked twice, are some of the features of the design.

Timken roller bearings are used.

Large drum fingers and contacts are used throughout with full overload and no-voltage protection on the primary side.

Texrope Pumping Unit

The Allis-Chalmers Texrope Driven Oil Well Pumping Unit, is also commanding much attention from operators. A number of these units have been installed in the Panhandle district and have given excellent results.

The outfit includes the following equipment: A cast iron base plate for mounting the motor and the speed reducer, an Allis-Chalmers two-speed slip ring oil well motor with slide rails, a suitable control apparatus for the motor, a Falk Herringbone gear speed reducer with extended shaft and bearing pedestal, a Texrope drive consisting of two grooved sheaves and six "V" type endless belts, a crank arm to which the pitman rod is attached, and a split sprocket for hoist work.

The entire outfit is shipped completely set up and mounted on its own base. To install the unit, it is set on its foundation, the pitman rod is connected to the crank, the control is connected, and everything is ready for operation.

It is claimed by the manufacturer that an average of 96 per cent efficiency can be expected from the outfit, from motor to crank.

Salvage value of the outfit is high, as it can be picked up and moved from well to well with minimum expense.

The highest gear speed obtained is not over 400 feet per minute.

Lubrication of both gears and bearings is automatic.

The Falk Herringbone steel gears in the speed reducer are on shafts mounted in bronze bearing shells.

The two speed slip ring oil well motor with Timken tapered roller bearings, drives the speed reducer through the flexible Texrope drive.

On one end of the low speed shaft of the reducer is mounted the crank which is direct connected to the pitman. A pedestal bearing supports the extended end of the crank shaft. The hoisting sprocket conforms to A. P. I. standards.

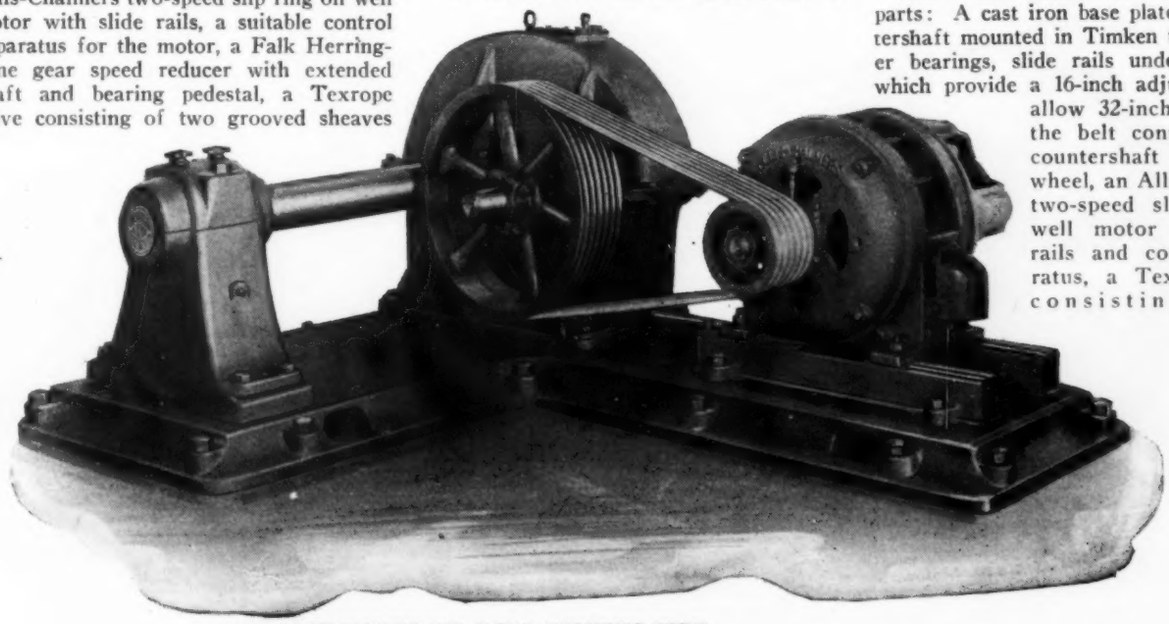
For changing the speed ratio of the unit to increase or decrease the number of strokes, extra motor sheaves can be furnished. A short time is required to change the ratio.

The control apparatus is mounted on an angle-iron frame and consists of a pole-changing drum which is used to change the primary connections of the motor from low to high or from high to low H.P. as desired. The main drum controller is mounted above to the left and consists of a specially designed drum which takes care of the reversing and the speed changes. There are six speeds obtainable on low H.P. and six on high H.P.

It is claimed that the Texrope drive has sufficient flexibility to absorb the extreme load changes and shocks always encountered in oil well pumping.

Oil Well Countershaft

Each unit consists of the following parts: A cast iron base plate with countershaft mounted in Timken tapered roller bearings, slide rails under the base, which provide a 16-inch adjustment and allow 32-inch stretch in the belt connecting the countershaft and band wheel, an Allis-Chalmers two-speed slip ring oil well motor with slide rails and control apparatus, a Texrope drive consisting of two



ALLIS-CHALMERS OIL WELL PUMPING UNIT

grooved sheaves and seven specially constructed "V" type endless belts, and a steel shaft with suitable extension for mounting pulley and sheave.

The countershaft is grease packed, as is the motor.

Salvage value of the unit is practically 100 per cent. It can easily be picked up and moved to a new well.

The base plate is made of cast iron and provides the support for the motor and countershaft.

Housing for the Timken tapered roller bearings extends the entire width of the base plate and is cast as an integral part of it.

Two grease cups on the top of the bearing housing provide lubrication for the bearings.

The motor is a two-phase variable speed motor of the slip ring type. The speed at the 15 H.P. rating at 60 cycles is 575 r.p.m. and the speed at the 35 H.P. rating is 1160 r.p.m. The control apparatus is mounted on an angle-iron frame and consists of a pole-changing drum which is used to change the primary connections of the motor from low to high or from high to low H.P. as desired. The main drum controller is mounted above to the left and consists of a specially designed drum which takes care of the reversing and the speed changes. There are six speeds obtainable on low horsepower and six on high horsepower.

More information on this unit can be obtained from Allis-Chalmers Manufacturing Company, Milwaukee, Wisconsin.

New Weber Products

WEBER ENGINE COMPANY

Weber Engine Company, Kansas City, Missouri, announces a new oil drilling engine and a roller bearing reverse clutch.

Weber Engine

The new engine is a single cylinder, two-cycle, horizontal oil engine of the semi-Diesel, medium compression, dry type. All principal moving parts are enclosed, dust and dirt proof, and are lubricated by force feed, augmented in the case of the main journal, by flood lubrication.

Design of the engine permits steady operation at a wide range of speeds and loads. Speed variations are secured by means of the "telegraph" control from the derrick.

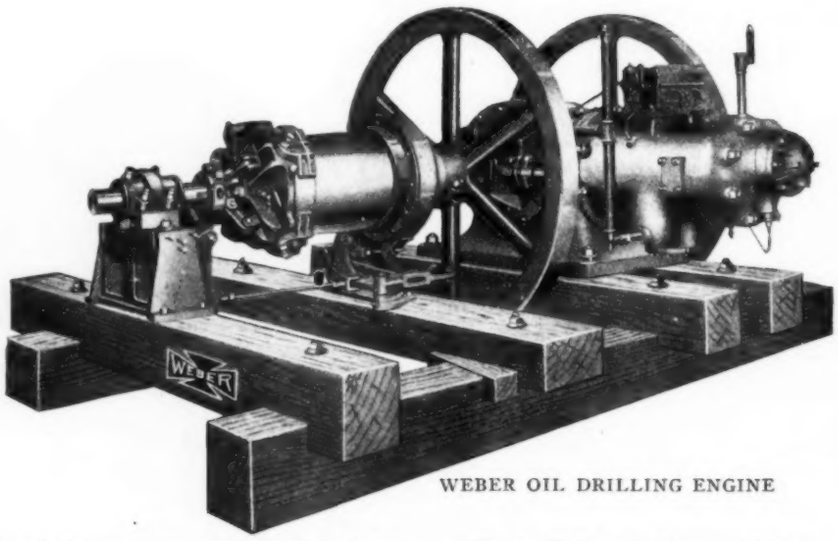
Weber Roller Bearing Reverse Clutch

The Weber clutch is so designed that it may be attached to any make or type of engine as well as to either side of the Weber. It is equipped with Hyatt roller bearings throughout. Bearings are enclosed and run in a bath of oil. Housings are fitted with specially designed sealrings.

The pulley is of unusual width having an 18-inch face and can be furnished in diameters of 12, 14, 16, 18 or 20 inches.

The oversize steel shaft is four inches in diameter. A wedge adjustment on the ring-oiled outboard bearing permits of ready alignment of the shaft while the outfit is running.

More information on both items of equipment will be mailed by request, from the company.

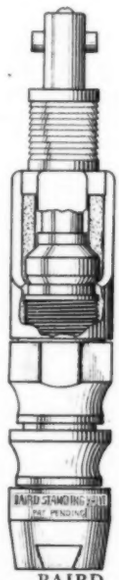


WEBER OIL DRILLING ENGINE

Baird Standing Valve

THE BAIRD TOOL WORKS

The Baird Tool Works, Inc., Tulsa, is manufacturing an improved design in standing valves, with oversize fluid ports which incorporates a valve lifter, valve puller, set of jars and fluid bleeder in the assembly that functions mechanically following the clutch engagement.

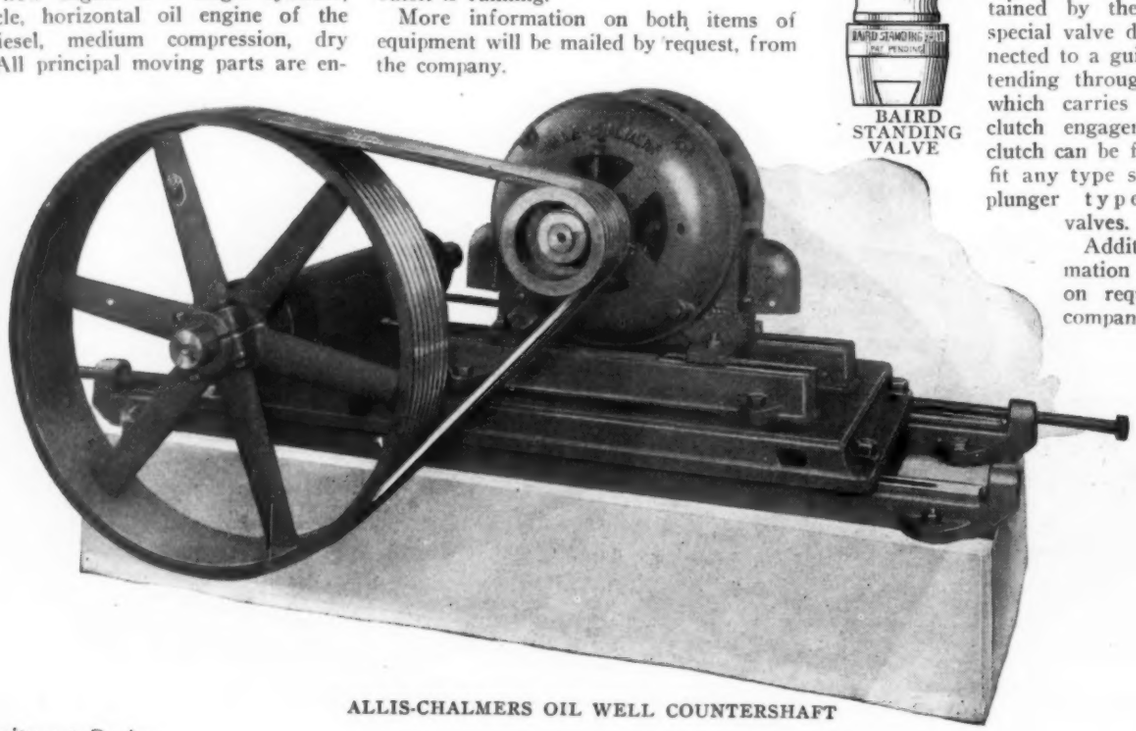


BAIRD STANDING VALVE

The clutch is installed as the lower member on the upper or traveling valve. Its engagement is had by lowering the sucker rods and making a quarter turn, giving the operator control of the fluid check in the bottom of the well from the derrick floor.

These features are obtained by the use of a special valve directly connected to a guide rod, extending through the cage which carries a pin for clutch engagement. The clutch can be furnished to fit any type standard or plunger type working valves.

Additional information is available on request to the company.



ALLIS-CHALMERS OIL WELL COUNTERSHAFT

Two New Dunn Products

DUNN MANUFACTURING COMPANY

The Dunn Manufacturing Company, Oxnard, California, announce two new products which have been placed on the market recently.

Super-Safe Tubing Stop

According to the manufacturers, this stop can be run in the hole as rapidly as desired without setting. A special anchor attachment is provided which permits anchoring of the tubing at any desired point in the hole. When used with this anchoring device, as many tubing stops as desired may be placed on the string, all of which will set simultaneously.

DUNN ROD HOOK

Dunn Hook

The new Dunn rod hook is of light weight, but it has a carrying capacity of 15 tons. Automatic operation of the locking device when under load is a feature of the hook. The safety latch is enclosed in the body of the hook.

Additional information on both products can be had from the company, upon application.

New Seamless Casing

AMERICAN SEAMLESS TUBE CORPORATION

A new type of casing of large diameter has been placed on the barket by the American Seamless Tube Corporation, Los Angeles and Houston.

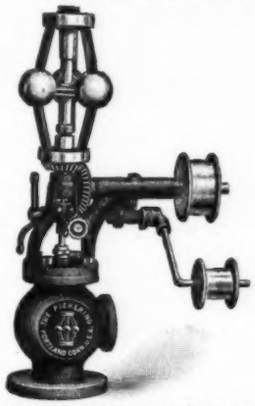
This product which is designated as American Seamless Inserted Joint Screw Casing is manufactured to A. P. I. specifications from Siemens-Martin carbon steel by the Pilger process, and is furnished in 18⅝-inch diameter, in lengths ranging from 35 to 45 feet. The casing weighs 96.5 pounds per foot.

It is claimed that much speed is possible in setting this casing on account of the long joints.

Further details will be provided by addressing the company at either Los Angeles or Houston.

Improved Governor

PICKERING GOVERNOR CO.



PICKERING GOVERNOR GUIDE

The Pickering Governor Company, Portland, Connecticut, announces that it has developed a gear guard and a complete housing for the revolving head of the Pickering Governor.

The guard is intended as a safety precaution since the opertaor cannot get his fingers drawn into the driving gears should he wipe off the governor while running.

The housing about the revolving head excludes dirt and grit and also is a safety feature.

More information can be had from the company, by request.

Merit Working Barrel

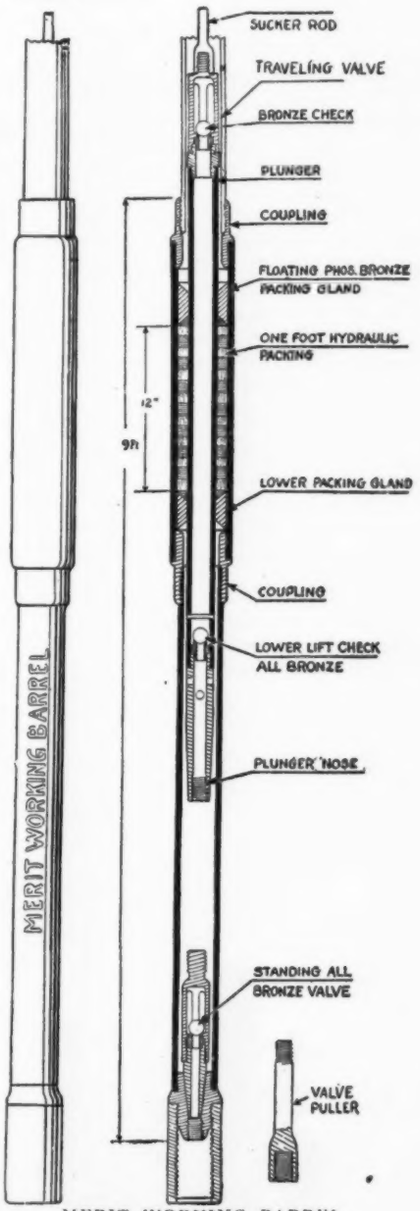
MERIT OIL EQUIPMENT CO.

The Merit Working Barrel, manufactured by the Merit Oil Equipment Company, 6616 Morgan Avenue, Cleveland, Ohio, is recommended as a suction and displacement pump which will handle floating sand. This pump packs itself automatically.

Main features of the pump include the automatic take-up on the packing which is brought about by weight of the head of liquid on a special constructed brass gland which acts as housing for the packing.

Construction of the working barrel is so designed that the liquid passing through the hollow plunger prevents the liquid from coming in contact with the packing. This places the wear entirely on the packing, which can be renewed with low cost.

If it should become necessary to pull the standing valve, the pump is so constructed that the standing valve may be pulled the same as on any barrel, and that the crown, ball, seat, and nipple can be pulled through the packing and glands without disarranging the packing.



MERIT WORKING BARREL

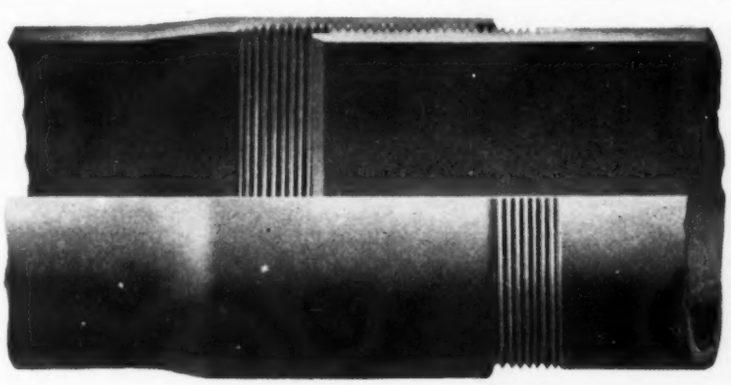
Cement Admixture

MASTER BUILDERS COMPANY

The Master Builders Company, Cleveland, Ohio, announces a recently developed admixture for use with oil field cement.

"MasterKem," as this product is called, functions with cement to effect a permanent bond between casing and side wall, to quicken the set of the cement, to neutralize the chemical action of bottom water, to aid in rendering the cement waterproof, and to increase the tensile and compression strength of the cement.

More information will be mailed on request to the company.



AMERICAN SEAMLESS CASING

New Lucey Products

LUCEY PRODUCTS CORPORATION

Lucey Products Corporation, 224 East Brady Street, Tulsa, Oklahoma, sales headquarters for the Lucey Manufacturing Corporation of Tennessee, Chattanooga, has developed a new 16-inch rotary and a portable draw works.

The 16-inch rotary is recommended for depths up to 3000 feet and are adapted for use with portable drilling rigs.

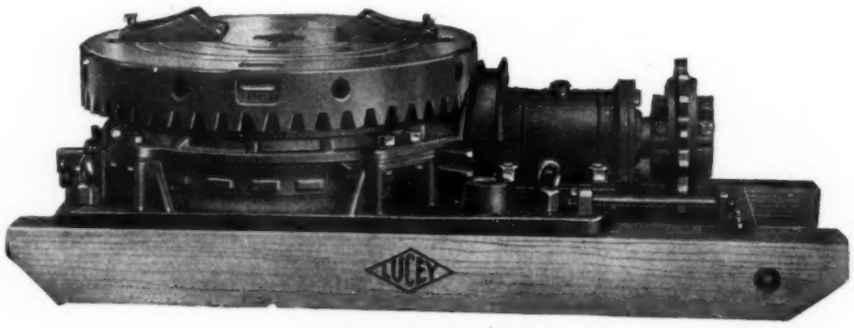
Electric steel castings and steel forgings are the materials used in constructing this equipment. Bases are one-piece castings.

The pinion drive shaft is made of forged steel and is mounted on two heavy-duty Timken tapered roller bearings. Solid box construction is used, with both bearings mounted in the same housing, mortised into the one-piece base. Lubrication is applied by the Alemite grease compressor with one connection on top of the box through which grease is forced into a large reservoir from which both bearings are lubricated.

The table is mounted on forged steel bearing cones. These bearing cones are lubricated by an oil bath supplied from a reservoir cast integral with the base.

The center table of the pipe screwing rotary is made in one piece, and carries the bearing on which the gear table runs when screwing up pipe. This bearing is lubricated by an oil bath applied through a hole in the top of the gear table. A series of drainage slots are cast in the center table to carry off any water or slush that might otherwise damage the bearing between the gear table and center table.

In each half of the master bushing is fitted a pawl which drops into a notch in the table and holds the master bushing securely in place in the rotary table. To remove the master bushing, screw the eyebolts, which are furnished with each machine, into the tapped holes in the ends of each pawl and lift in the usual way. This disengages the pawls from the table and allows the master bushing to be withdrawn.



LUCEY 16-INCH ROTARY

The table to table locking device consists of two rectangular solid steel blocks which slide in ways placed, diametrically opposite, in the gear table and engage slots in the center table.

The table to base locking device consists of one rectangular solid steel block which slides in a slot in the base and engages one of a series of notches which are cast around the lower circumference of the center table of the pipe screwing rotary or gear table of the standard rotary.

Draw Works

The Lucey portable draw works is designed for depths to 2500 feet and has reserve strength to meet emergencies encountered in drilling operations to this depth.

The reverse clutch used is the roller bearing, multiple disc type.

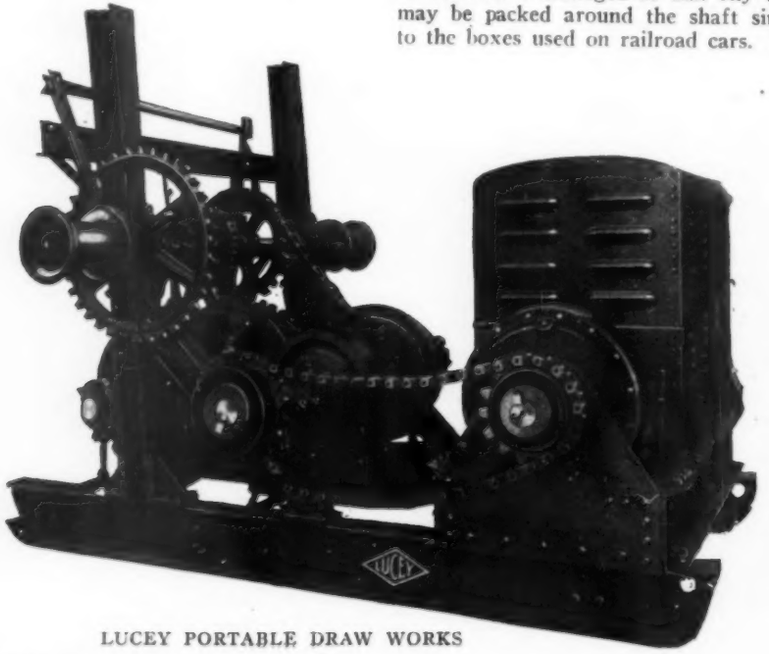
Gears are machine cut and operate in a bath of oil.

A gasoline engine of 100 horse power is furnished as regular equipment, but other sizes of engines can be furnished if desired. Electric motor or steam engine drive can also be provided, in which case the reverse clutch is not required.

Bearing boxes are of electic steel, babbitt lined. They are provided with large oil reservoirs arranged so that oily waste may be packed around the shaft similar to the boxes used on railroad cars. Reservoirs are provided with hinged covers to keep out dirt and mud.

If desired both drum shaft and line shaft can be fitted with self-aligning roller bearings.

Additional information on both products may be had by writing the company.



LUCEY PORTABLE DRAW WORKS

New Speed Reducer

PACIFIC GEAR AND TOOL WORKS

The Pacific Gear and Tool Works, San Francisco, has designed and put on the market a special line of oil country speed reducers for motor pumping service.

This line consists of the standard reduction units for belt or chain drive to the band wheel together with a special double reduction gear set.

Herringbone gears are used in this outfit. End thrusts have been eliminated.

Selected alloy steels are used in the gears and shafts.

Heavy-duty bearings are used throughout. Bearings are lubricated by a continuous flood of oil from the gear case.

The standard unit for the 50/20 horsepower motor is rated on the name plate, the same as the motor. It is claimed that this motor is amply safe for 150/65 horsepower at the pulling and pumping speeds respectively.

A special metal link coupling is used in this assembly.

In order to accommodate the various types of motors now in service, the Standard Oil Country speed reducers are furnished in ratios of from four to one; to six to one, at the purchaser's option. The double reduction or direct pumper is so designed that the ratio may be quickly changed in the field.

Further information on the outfit with illustrated literature will be mailed from the company, on request.

Oil Field Truck Chain

COLUMBUS McKINNON CHAIN COMPANY

The Columbus McKinnon Chain Company, Columbus, Ohio, announce a new type of chain for pneumatic truck tires.

The chain, which is called the "Oil Field Special," is of heavy construction. It is made in all the heavy pneumatic truck tire sizes with extra thickness.

Further information will be mailed by the company, on request.

HUNDREDS of *miles* of pipe were straightened in 1927 with W-K-M *portable Hydraulic Machines*

Literally hundreds of miles of pipe, ranging in size from 2" to 8" inclusive, were straightened and reclaimed with W-K-M Portable Hydraulic Pipe Straighteners in 1927.

Enormous savings were effected by oil companies and tremendous values added to pipe inventories with these machines. Savings made in straightening from 50 to 90 joints of pipe, depending upon size, will pay for a machine. The machine will last indefinitely, as there are very few moving parts.

Improved W-K-M Pipe Straighteners for 1928 are equipped with detachable cylinder heads, for quick replacement of piston leather cup; leak proof oil gland at bottom of cylinder; special pipe shoe retaining head; and any one of 12 different sizes of pipe shoes for handling all sizes of pipe.

Write for special illustrated descriptive matter, today.

W-K-M Pipe Straighteners are entirely self-contained, and ready to go to work wherever you put them.

WEIGHT
1275 pounds
POWER
hand
PRESSURE
30,000 pounds
CAPACITY
8" pipe and smaller

This machine is entirely self contained and is ready to go to work wherever you place it. Can be skidded, or hauled on wagon or ton trucks.

PRICE

$372.50

F. O. B. Wichita Falls, Texas.

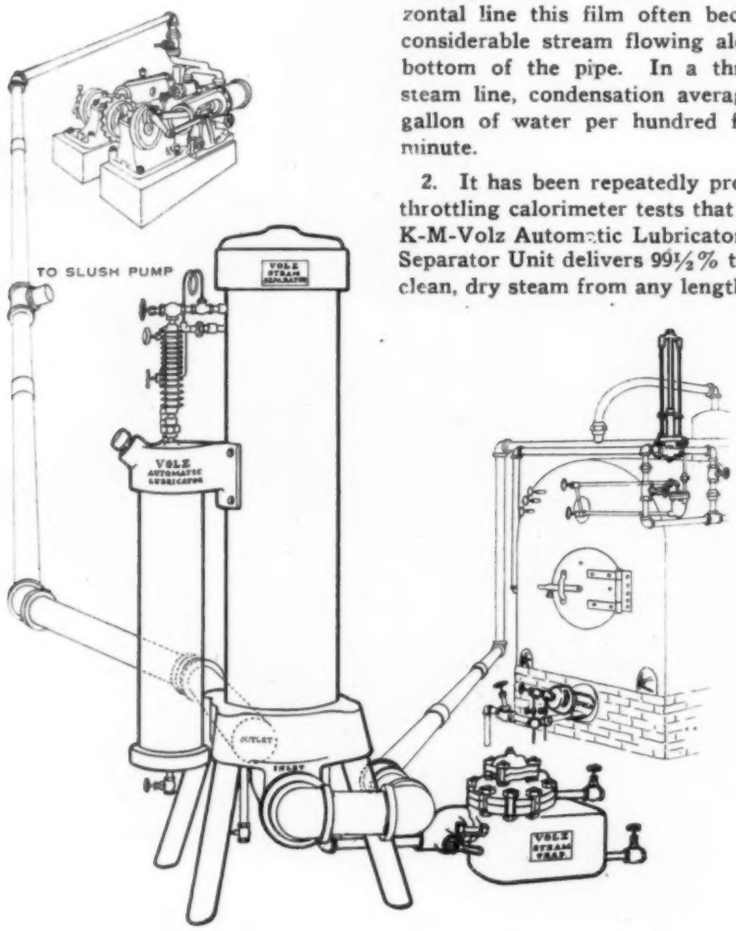
W-K-M COMPANY, INC.

HOUSTON, TEXAS

Say you saw it in The OIL WEEKLY

The GREATEST $350 worth of equipment you can buy for *a steam drilling rig!*

Beyond a doubt, the W-K-M-VOLZ Steam Separator and Automatic Lubricator is the greatest $350 worth of equipment you can buy for a steam drilling rig. Read what it does and what it saves, and then send the attached coupon for full details. Or write, wire or 'phone to arrange for a demonstration on your own lease, in any field.



HERE'S FULL STORY CONDENSED FOR EASY READING

1. Efficiency Engineers' tests have proved conclusively that all steam lines have a water film around the inside of the pipe due to radiation. In a horizontal line this film often becomes a considerable stream flowing along the bottom of the pipe. In a three-inch steam line, condensation averages one gallon of water per hundred feet per minute.

2. It has been repeatedly proved by throttling calorimeter tests that the W-K-M-Volz Automatic Lubricator-Steam Separator Unit delivers 99½% to 100% clean, dry steam from any length steam line. It is doing it on lines 1200 feet or more long.

3. Water gets between cylinder heads and pistons, driving valves away from their seats. The valves being on lap, cramp the stems and the eccentric in its rotary action pulls the strap off eccentric, breaking eccentric rods, valve stems or cylinder heads.

4. Engineers know that oil vaporizes and lubricates only when in contact with dry steam. Wet steam and water cannot be lubricated. They merely flush oil through the steam line wastefully.

5. The main steam line enters Separator at an angle causing the wet steam to whirl around an inner skirt and baffle plates, throwing out water, scale and sediment which drops to the bottom and is removed by the steam trap without loss of steam.

It eliminates engine knocks, water slam and the delay and expense of shutting down to replace broken parts because it removes all wet steam and water from throttle to boiler by centrifugal force, not by gravity alone as is commonly done, delivering only clean, dry steam.

This dry steam is properly and economically lubricated by the Automatic Lubricator regardless of weather temperature, because the Lubricator top casting which is attached to the Steam Separator and is controlled by the difference in pressure between Steam Separator inlet and outlet, transmits heat to the oil. Lubrication is controlled by the difference in pressure between Steam Separator inlet and outlet. The oil feed is adjusted at peak load, after which it need not be changed as it automatically varies feed with varying difference in pressure according to load. When engine stops, oil feed also stops because pressure at inlet and outlet is then equal. The saving in oil is obvious, consumption frequently being reduced 50 per cent or more.

6. It has often saved its cost on a single well, is so simply and sturdily built that apparently it never wears out and it costs nothing for maintenance.

Features of W-K-M Volz-Steam Separator at a Glance

1. Removes all water, and delivers pure, 99% dry steam to engines and pumps.
2. By removing water, Separator gives at least 20% to 25% more power and efficiency to any steam drilling engine, or any slush pump. When you crack the throttle of an engine equipped with a W-K-M-VOLZ Separator, it is just like throwing the switch on an electric motor. You get the same quick, live response—with all sluggishness gone.
3. Eliminates shut-downs due to broken valves, valve rods, cylinder heads, cylinder gaskets, eccentric straps, etc., by preventing water from reaching engine.
4. Provides perfect lubrication by atomizing oil and mixing it with steam furnished engine and pumps. Atomized oil can not be flushed out exhaust. Check the ground under your engine exhaust, and note the puddle of lubricating oil.
5. Permits boiler to be located from 300 to 3,000 feet from engine, thus avoiding danger of igniting gas or spraying oil when well is drilled in.
6. Lengthens life of engine and pumps by fifty per cent by furnishing atomized lubrication.
7. Permits "cracking" throttle at any time, even after a shutdown of some duration. No need to run engine slowly on starts.
8. Cuts oil consumption 25% to 50% by regulating flow of oil in accordance with volume of steam being furnished. Lubricator cuts off automatically when engine and pumps are shut down, and requires no attention.

$350.00 F. O. B.
Houston, Texas

W-K-M COMPANY, INC.

HOUSTON, TEXAS

Exclusive Distributors, except in California

SEND THIS COUPON TODAY!

W-K-M COMPANY, INC., Houston, Texas.

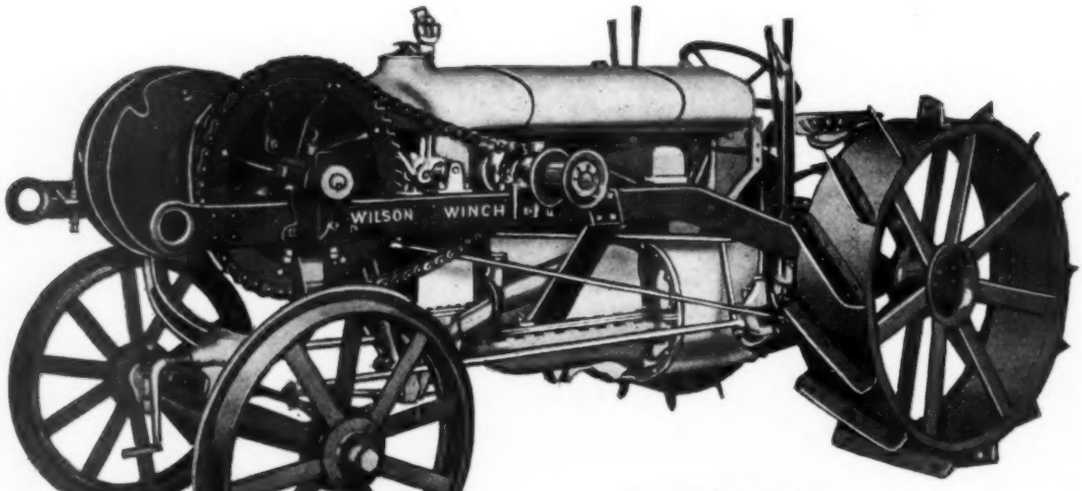
Gentlemen:—You may send us full details covering the W-K-M-Volz Steam Separator and Automatic Lubricator, to the following address:

Name .....

Street .....

City .....

State .....



W-K-M Wilson Oilfield Winch

NOTHING beats the W-K-M WILSON Winch for low-cost *pulling Jobs!*

Nothing yet built can beat the W-K-M Wilson Winch, for use with the Fordson Tractor, on low-cost pulling jobs.

Field superintendents who pump with powers, use them almost exclusively on rod and tubing work. They depend upon them always for fast, safe pulling jobs.

Where standard rigs powered with gas engines are used, W-K-M Winches get the job of rod and tubing pulling. They do the work faster, cheaper and better—and save expensive repairs on clutches and reverses.

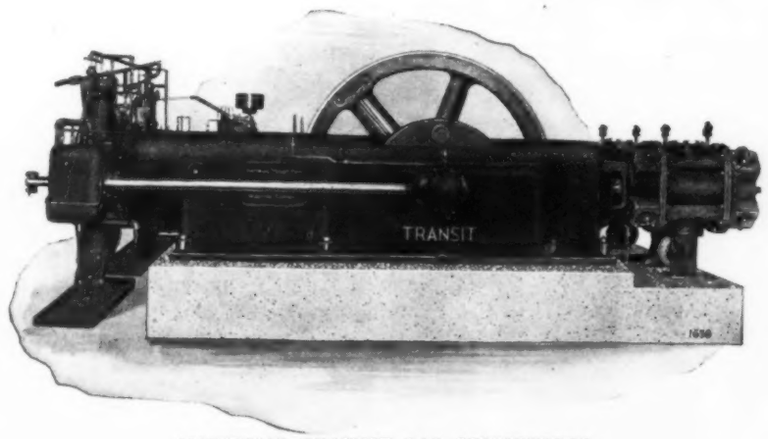
Even on the latest types of electrically driven pumping units, equipped with draw-works, W-K-M Winches are more and more frequently getting the pulling jobs. It has been discovered that burned-out motor windings and armatures are far more expensive than the cost of operating a W-K-M Wilson Winch on a well for two or three hours.

Capable of ten thousand pounds pull on a single line direct on the drum, up to 21,000 pounds on three lines direct on the drum; having four speeds forward and two reverse; and built heavily throughout to stand the gaff of oilfield service, you will find the W-K-M Wilson Winch the one best buy on the market today for low-cost pulling jobs.

Hundreds of Fordson dealers, conveniently located to all of the producing pools, are equipped to demonstrate the W-K-M Wilson Winch to you on your own lease. If you are not now using one of these machines, write, wire or telephone us to arrange a demonstration for you. This we will gladly do. Tell us where your pulling job is, and we'll see to it that a W-K-M Winch is delivered to handle it for you.

W-K-M COMPANY, INC.
HOUSTON, TEXAS

Say you saw it in The OIL WEEKLY



NATIONAL TRANSIT GAS COMPRESSOR

Transit Gas Compressor

NATIONAL TRANSIT PUMP AND MACHINE COMPANY

National Transit Pump and Machine Company, Oil City, Pennsylvania, is announcing a new Transit Model 26, horizontal twin gas engine gas compressor. The outfit was designed especially for compressing natural gas, for either transmission through pipe lines or for gasoline extraction processes.

A notable feature of the outfit, according to the manufacturers, is that with the exception of the main frames and cam shafts, parts that are usually made right and left hand, have been made interchangeable, so that they can be used on either side of the engine.

Each end of each frame ends in a heavy, internal flange. The cylinder is bolted to this flange on one end, and the compressor adapter and compressor to the flange on the opposite end. The portion that forms the crank pit is of box section.

Top and bottom bored guides are provided for the main cross-head. The compressor crosshead is carried on a bored bottom guide.

The guides and crank pit are separated from the cylinders by partition plates having stuffing boxes through which the piston rods pass.

Each cylinder is a separate casting with its inlet valve on the upper side and the exhaust valve on the lower side. A water jacket space is formed around each valve opening. The cylinder barrel projects into the main frame, and is sealed at the inner end with a rubber packing ring and a gland, leaving it free to expand. The flange on the power end of the frame is recessed to form a packing space for a rubber ring to retain the jacket water.

The cylinder head is cast iron, internally ribbed for strength, and independently jacketed, with cooling water inlet and discharge flanges on its outer surface.

A central opening through the head is provided for the igniter. A soft copper gasket is used between the cylinder head and the cylinder.

The piston is made of cast iron, ribbed for strength, and is air-cooled. It is equipped with five American hammered piston rings. The connection to the cross-head is through an open hearth steel piston rod turned to size, screwed and riveted into the piston, and screwed into the cross-head on the other end and locked with a jam nut. A stuffing box in the partition between the cylinder and the crank case retains practically all of the lubricating oil that falls on the rod on the crank case side of the partition.

The crank shaft is an open-hearth steel forging, 11½ inches in diameter throughout its length.

Main bearings are of standard quarter box construction. The bottom and side shells are steel castings, and the top shell is of iron. Shims are provided between the bottom and side shells and the top and side shells. The bottom shell is flat on the under side.

Inlet and exhaust valve castings are separate from the cylinders. The springs and guide pistons are interchangeable.

Valves are cam operated. The cam shaft is driven by means of a drag crank and linked from the end of the crank pin. An adjustable coupling in the cam shaft permits setting the valves with sufficient accuracy without disturbing the gears.

The air starting valve is operated from the same cam that operates the inlet and exhaust valves. A combination of levers coupled with an eccentric and hand-wheel shaft permits throwing the air starting valve in and out of engagement with one-half turn of the hand-wheel.

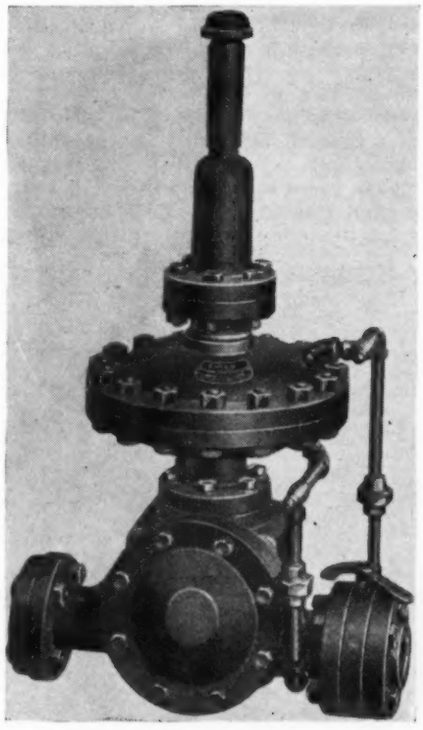
In designing the regulating valve mechanism, care has been taken to maintain the proportion of gas and air uniform for every position from no load to full load.

The engine is equipped with make and break igniters, supplied with current from a five-cell storage battery through a spark coal.

All bearings with the exception of the fulcrum bearings of the exhaust levers are lubricated from the gravity system through adjustable sight feeds.

A plunger operated by centrifugal force, in the rim of the flywheel in combination with a latch and switch, serves to break the ignition circuit when a certain speed above normal operating speed is reached.

More detailed information will be provided on request to the company.



EMCO FLOW METER

Emco Flow Controller

PITTSBURGH EQUITABLE METER COMPANY

Operators using air or gas lift methods of recovering oil will be interested in the Emco Flow Controller, being introduced by the Pittsburgh Equitable Meter Company, Pittsburgh, Pennsylvania.

The air or gas is lead from the compressor into the inlet end of the controller, and passes through two balanced valves toward the outlet. At the outlet of the regulator there is placed a variable orifice in the form of a butterfly valve. By turning the handle at the end of the butterfly stem, the orifice through which the air or gas must pass is varied in effective size.

The diaphragm head through which the volume control is obtained is mounted directly above the valves and rigidly connected to them. The flexible diaphragm is clamped securely between two plates threaded to the diaphragm stem. A long spring bears upon the top diaphragm plate, and is adjustable by means of a screw at its top end. The lower part of the diaphragm chamber is connected by a short pipe to the regulator at the high pressure or inlet side of the orifice. The upper part of the diaphragm chamber is so connected that the pressure at the outlet or lower side of the orifice is lead into this chamber.

For a given setting of the orifice, if the rate of flow of gas increases the pressure on the high side of the orifice increases, and that on the lower side decreases. This unbalanced force will move the diaphragm upward, and tends to close the balanced valves. This, of course, limits the rate of flow through the valves and through the orifice so

that the increase of flow is stopped. Conversely, if the rate of flow tends to decrease, the pressure in the lower half of the diaphragm chamber decreases with respect to the pressure in the upper half. The springs, then, due to the unbalanced force, forces the diaphragm down and opens the valve, and in this way the correct rate of flow is maintained.

It will be seen that for any given orifice setting the spring setting can be varied. If the adjustment screw is turned down, more pressure will be required in the lower diaphragm chamber. In other words, a greater differential pressure is maintained across the orifice. If the spring setting is not as heavy a lower differential pressure is maintained across the orifice. In this way any desired differential can be obtanied.

Adjustments in volume are also possible through the use of a butterfly valve. In its closed or zero position the orifice is very small, and for a given differential pressure the volume is small. The orifice in its wide open position, which reads 90 on the graduated arc will pass the maximum volume of gas for a given differential pressure.

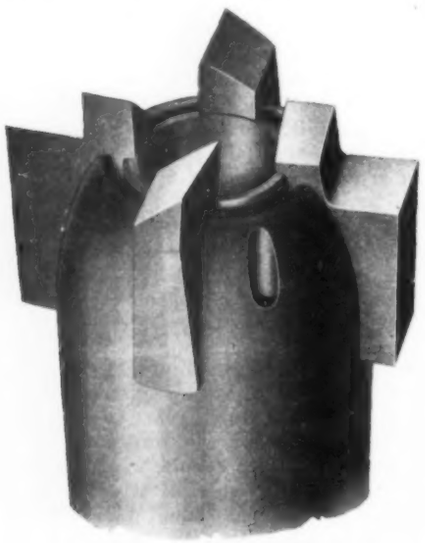
More information can be had from the company on request.

Elliott Core Drill

ELLIOTT CORE DRILLING COMPANY

Elliott Core Drilling Company, Los Angeles, California, has recently placed on the market a new core drill.

A feature of the drill is the removable cutting teeth. This makes the



ELLIOTT CORE DRILL

drill adaptable for use on isolated locations. New sets of cutting teeth can be supplied at a nominal cost.

Heat treated steel is used in those parts of the drill subjected to the greatest strain or wear. Teeth are forged and the wearing surfaces are coated with Stellite.

For particularly hard digging, teeth are furnished with insets of metallic oxides.

Further particulars regarding the drill can be obtained from the company or any of its branches.

Elliott Alco Bit

ELLIOTT CORE DRILLING COMPANY

The Elliott Core Drilling Company, 850 Subway Terminal Building, Los

ELLIOTT-ALCO FOUR-WAY DRILLING BIT

Angeles, is the distributor for the new Elliott-Alco Four Way Drilling bit.

This bit is made of a special steel casting with four blades set at a 90-degree angle, each blade heavily Stellited. Two of the blades are cutting blades and the other two are auxiliary or reaming blades. The auxiliary blades act as a guide to the cutting blades, ream the hole and aid in keeping it straight.

Four circulation holes give direct circulation against each of the four blades.

The bit is manufactured by the Alco Oil Tool Company, Box 1188, Compton, California, and distributed by the Elliott Core Drilling Company.

Elliott's Mid-Continent office is at 3210 Harrisburg Boulevard, Houston. Either company will supply further information.

All-Steel Pulling Machine

GENERAL MACHINE COMPANY

General Machine Company, Wichita Falls, Texas, announces the Continental pulling Machine which is being distributed through Continental Supply Company stores.

The machine is of all-steel telescoping type construction. Its light weight enables it to be quickly raised into pulling position and moved from one well to another.

A special locking mechanism locks the inner to the outer section and does not allow the inner section to turn in the outer.

Crown sheaves can be removed without removing the head.

The machine is built in two sizes, No. 2 and 3. The number of the machine indicates its capacity for handling two-inch tubing in thousands of feet.

Information can be obtained from any Continental Supply Company store.

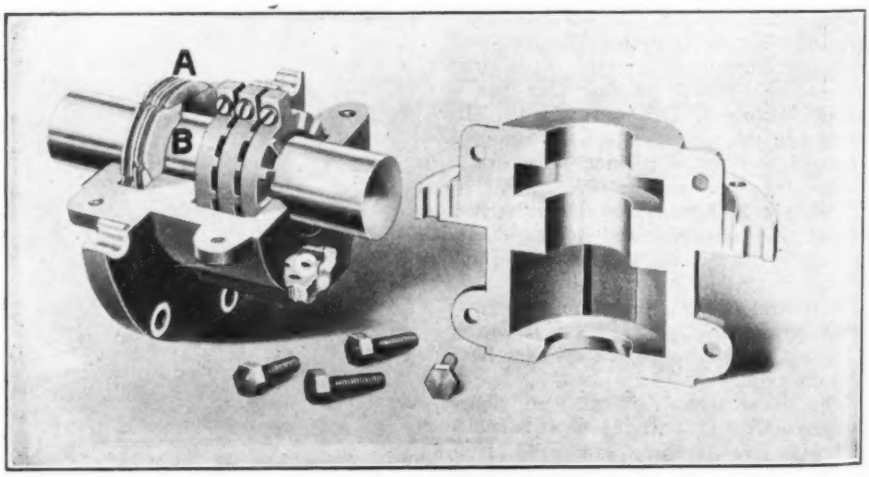
New Typemetal Packing

GARLOCK PACKING COMPANY

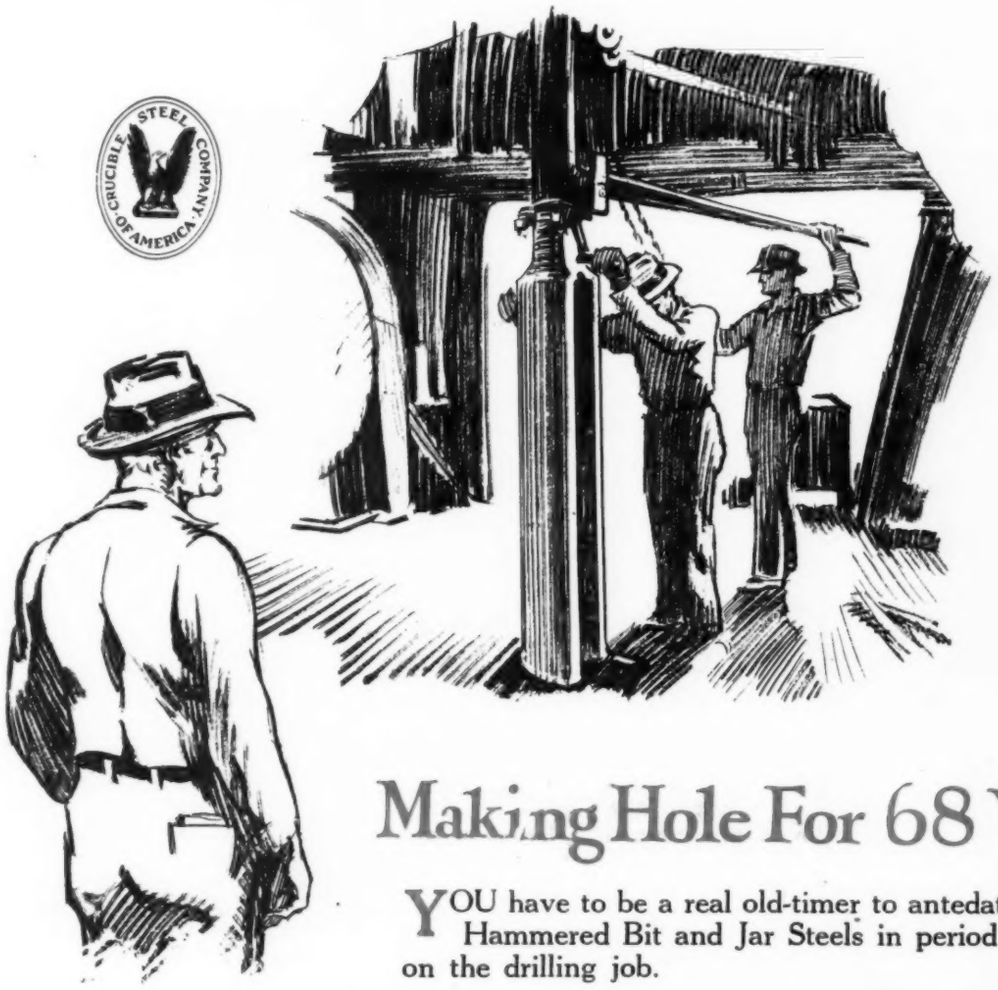
The Garlock Packing Company, Palmyra, New York, has just placed on the market a new type of metal packing which is to be known as Garlock Oil Return Wall Plate Metal Packing for gas and air compressors.

The packing is furnished in either split or solid case, which is bolted to the partition wall plate after the stuffing box is removed.

As shown in the accompanying cut, A represents the pressure vacuum ring which faces the cylinder side of the wall plate, B represents three improved types of oil wiper rings, and C represents holes in the bottom half of the split case through which the oil returns to the crank case.



GARLOCK METAL PACKING



Making Hole For 68 Years

YOU have to be a real old-timer to antedate Crescent Hammered Bit and Jar Steels in period of service on the drilling job.

Crescent Bits made hole in the first well drilled in this country—the Drake Well in Pennsylvania—68 years ago.

To old-time drillers, Crescent Hammered Bit and Jar Steels are a familiar story. They know that Crescent Bits and Jars keep to gauge longer and make more hole in less time—and with less time out for dressings.

On your toughest drilling job, make hole with Crescent Hammered Bit and Jar Steels and watch them walk away with the performance records.

Crescent Hammered Bit Steel

Furnished in all sizes, in plain sections, or with tong holds drawn to any diameter or taper.

Crescent Hammered Jar Steel

Furnished in all sizes, with corners knocked down, nicked in center if desired, and to any length.

Cresent Hammered Jar Capping Steel

Furnished in all sizes, with corners broken down. Readily welded and heat-treated.

Calumet Box and Pin Steel

Furnished in all sizes; cut in short pieces if desired.

Max-El Slip Steel

When properly heat-treated, it is possible to obtain great toughness and high physical values; furnished in all sizes and carburizing and straight hardening analysis.

Max-El Socket Steel

The best for swivel and stiff sockets; when properly heat-treated, results in high tensile values coupled with toughness resulting in greatest resistance to battering and wear. Furnished in any size, rounds or in billets.

CRUCIBLE STEEL COMPANY OF AMERICA

General Offices
17 East 42nd Street, New York, N. Y.

BRANCH OFFICES AND WAREHOUSES

Atlanta, Baltimore, Boston, Buffalo, Chicago, Cincinnati, Cleveland, Denver, Detroit, Hartford, Indianapolis, Milwaukee, New Haven, New York, Philadelphia, Pittsburgh, Providence, San Francisco, Seattle, Springfield, St. Louis, St. Paul, Syracuse, Montreal, Toronto, London, Tokio

Crescent Hammered Bit & Jar Steel

New Reagan Products

REAGAN FORGE AND ENGINEERING COMPANY

Regan Forge and Engineering Company, San Pedro, California, announces three new products developed during the past few months.

Regan Rotary Swivel

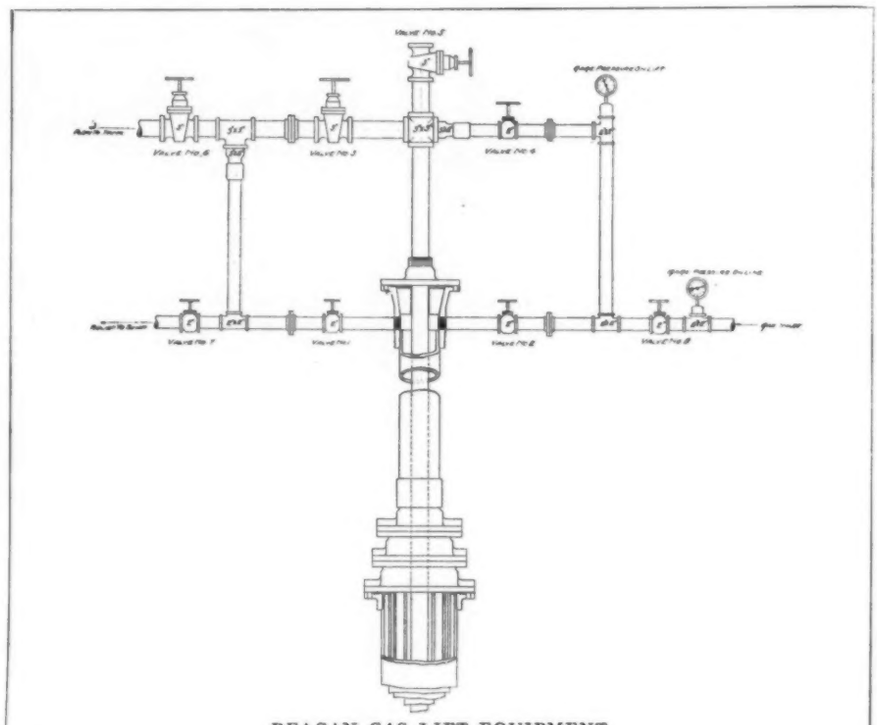
Application of the universal joint principle is embodied in the Regan Rotary Swivel. By embodying the four-point suspension principle equal distribution of the load to all points of the bearing is permitted, and a free swinging movement from side to side and back and forth is made possible.

Fall of the bail is limited to a conveniently angled upright position.

A flat type roller bearing is used. The bearing is lubricated in an oil bath and the oil chamber is easily refilled through an accessible oil duct. The chamber can be drained and flushed clean without removal of the bearing.

The swivel embodies leak-proof construction to prevent mud from reaching the oil bath and bearings.

REGAN ROTARY SWIVEL



REAGAN GAS LIFT EQUIPMENT

Regan Crown Block

In the new crown block, instead of all the sheaves being placed parallel one to another, the sheaves carrying the fast moving lines are set at a 90-degrees angle to the slower lines, thus permitting the use of large sheaves with the same or less area.

An auti-friction bearing is provided on each side of each sheave and the sheaves have an individual rotating pin similar to the Regan Traveling Block.

The dead line and slowest line are placed next to the finger board.

The block can be quickly dissembled and assembled piece by piece at the top of the derrick and can be quickly converted from a four to a six, eight or ten-line string-up by the addition of sheaves without shifting of the beams.

Gas Lift Equipment

Regan tubing head and control head flanges have been used recently as excellent hoop-up in air and gas lift work.

Use of the control head allows a convenient means of obtaining proper pipe suspension, and in case of a well blowing wild, the flanges offer a convenient means of capping.

Interior of the tubing head is tapered so that slips can be placed therein when running in tubing.

More information on all these items will be mailed by the company, on request.

REGAN CROWN BLOCK

Hold-Up and Hold-Down

THE TEXAS STEEL COMPANY

The Texas Steel Company's special heavy hold-up and hold-down castings were designed to meet conditions not covered by the regular standard castings. They are manufactured in both the three-inch and four-inch pipe sizes so that the pipe members can be furnished by the consumer from old pipe on the lease and in lengths to conform to local conditions.

The tubular section comprising the top member of the frame also acts as a reservoir for oil to lubricate all bearings and the "D" stirrups on the end of the pendulum. The stirrups act as a valve or cover for the oil duct, thereby preventing escape of lubricant except as a film distribution over the bearing surface. This is an exclusive feature.

The pipe sections can be fitted with flanges and bolted to the concrete foundation as shown in cut, or they can be extended and concreted into holes in the ground, either method provides a firm, rigid setting.

More information will be supplied by The Texas Steel Company, Fort Worth, Texas.

NEW PRODUCTS

of PROVED Merit to the Producer

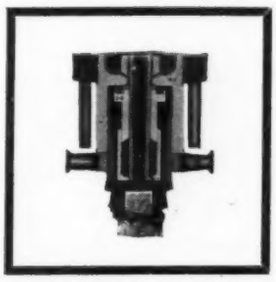
McKISSICK *Safety* BLOCKS

are the SAFEST, SUREST AND SIMPLEST OPERATED blocks ever invented. THERE HAS NEVER BEEN AN ACCIDENT WHERE A McKISSICK BLOCK WAS USED! And we don't need to knock on wood when we say there never will be one, because McKISSICK Blocks are built for SAFETY, first, last and always.

McKISSICK BLOCKS are absolutely fool-proof in design, and powerfully built to give maximum service with minimum upkeep and attention. One feature alone makes McKissick Blocks well worth the money. That is our reservoir oiling system, located in the sheave, which insures trouble-free operation at all times, and makes McKissick Blocks outlast any other kind. When you specify McKissick Blocks you are protecting your workmen against personal injury, as well as protecting your investment against loss from faulty traveling-block operation. McKISSICK BLOCKS ARE LONG-TIME INVESTMENTS THAT PAY BIG DIVIDENDS IN LOWER OPERATING COSTS.

Patented and Patents Pending

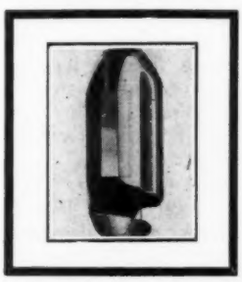
PEERLESS (Floating Type) STUFFING BOX



Peerless Floating Type Stuffing Boxes occasion less wear in all parts of your pumping equipment, because of their floating feature which gives the same effect as a straight-pull pumping jack. Rings cannot wear oblong, and these stuffing boxes are absolutely non-leaking. By actual test, not in one case, but in dozens, the Peerless Stuffing Box gives from 10 to 30 days longer service per packing.

For Sale by All Leading Supply Stores

PEERLESS Bronze ROD GUIDE

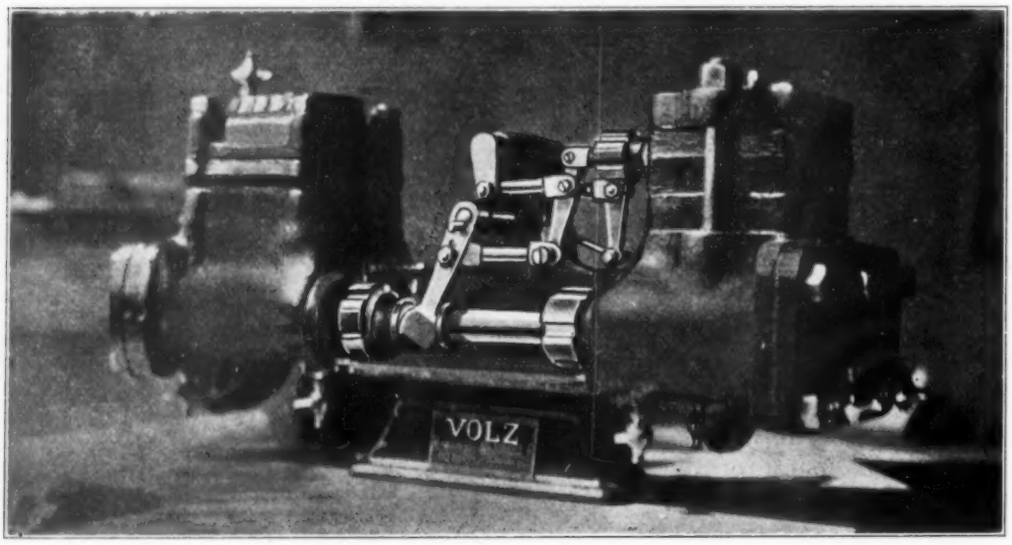


"Simplicity is the hall-mark of Perfection" Peerless Rod Guides are made from special analysis bronze, softer than tubing, yet hard enough to protect tubing from wear caused by friction with rods in crooked holes. Large channels provide ample passageways for fluid. The only successful two-piece rod guide made.

For Sale by All Leading Supply Stores

Peerless SUPPLY COMPANY
Tulsa, Oklahoma

Say you saw it in The OIL WEEKLY



VOLZ COMPOUND VALVE MOTION

Volz Company Products

VOLZ ENGINEERING EQUIPMENT COMPANY

The Volz Cross Compound Valve Motion, perfected by the Volz Engineering Equipment Company, 3732-3734 E. Seventh Street, Long Beach, California, is the standard duplex pump valve motion with the addition of two members on each side; an additional link and a floating lever. The valve chest is usually raised about two inches with a plain blank and the double port partition is drilled through so that both ports act as one.

Lubrication is effected in the ordinary way.

The valve is thrown by the action of both pistons upon a floating lever. The piston on the same side also acts through a link to the floating lever. While the right hand piston is finishing its stroke, the left hand piston is under way on its stroke.

At this time, when both pistons are moving, steam is divided equally between them and their speed is one-half normal. When the right hand piston finishes its stroke, its valve port is closed and all steam enters the left hand cylinder, producing full speed until the lap condition arrives again near the end of the stroke.

The motion is recommended for all duplex steam pumps, especially high-duty pumps, slush pumps and oil shipping pumps.

VOLZ METAL PACKING RINGS

Metal Packing Rings

Volz metal packing rings for pistons of liquid pumps are also a recent development of the company and are recommended for use on the water end of boiler feed pumps, and also on oil, water, or gasoline pumps.

More detailed information on both products will be mailed on request to the company.

PORTABLE VACUUM RIG

Portable Vacuum Rig

THE PORTABLE VACUUM RIG COMPANY

The Portable Vacuum Rig Company, Inc., 1018-1019 Santa Fe Building, Dallas, Texas, is putting on the market a machine recommended for both cleaning out and drilling oil wells.

The outfit operates on the principle of the suction dredge, and though primarily intended for the cleaning of wells, it has been used successfully for drilling. In a general way the rig operates as the usual rotary except that the flow of water is sucked up from the drill through the drill pipe instead of being forced through the drill pipe to the drill.

The rig, including the derrick, is mounted on a one-ton truck having a 35-horsepower engine for motive power.

The motor truck is a one-ton Ford chassis equipped with a Waukesha engine. The truck is operated by a standard gear shift and has three speeds forward and reverse.

Drilling equipment on the outfit consists of a self-priming rotary pump with an efficiency lift of 30 feet and delivering 90 gallons of water per minute at 40 pounds pressure, a water and slush tank made of five-sixteenths-inch plate welded throughout and having a capacity of 250 gallons, a swivel fitted with a thrust ball bearing at its base and a radial ball bearing above draw-works or hoisting drum made of cast steel and having a self-contained double-faced cone clutch operated by a screw and fitted with a Kelly drive and slips, a specially designed two-inch steel the packing gland, a 12-foot Kelly having a two-inch bore and two and one-half-inch right and left hand pipe connections, a reinforced two-inch suction hose 20 feet long and a discharge hose 10 feet long, and a folding derrick made of structural steel fitted with a head pulley, three and three-eighths-inch guy lines and 300 feet of one-half-inch hoisting cable.

The pump, hoisting drum, and the rotary table receive their drive through cut sprockets and a roller chain from a countershaft, which in turn is driven from specially designed cut sprockets fitted to both the rear wheels of the truck.

The pump, hoisting drum and rotary are independently driven by individual clutches.

By means of reach rods the truck gear shift, clutch and throttle are transmitted to the rear end by the side of the derrick within control of the driller as are the controls of the drilling rig.

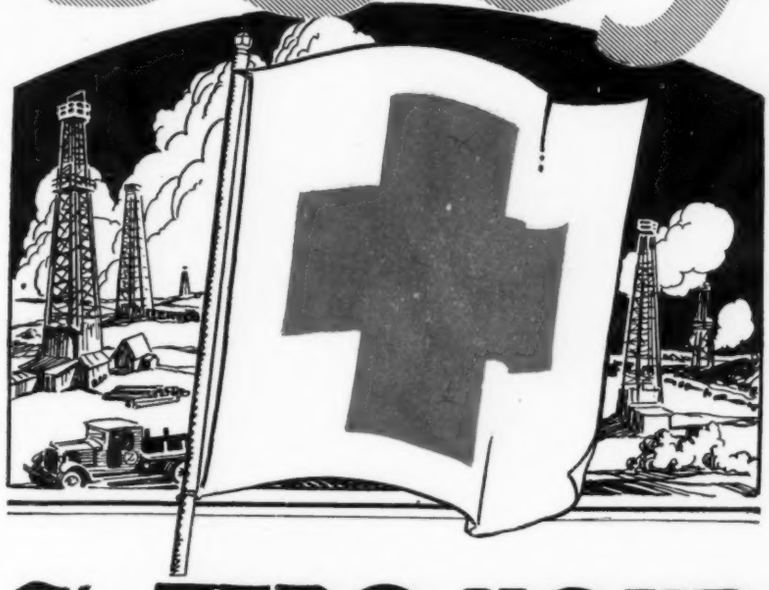
The tank acts as a trap or catch-all, taking the place of the slush pit.

The hose leading from the swivel is connected to the tank and the tank in turn is connected to the suction of the pump and the pump in turn discharges into the hole surrounding the drill pipe.

In operation, circulation of water is established from the hole formed by the drill to the drill pipe through port openings in the drill. The water entering the drill pipe through these ports carries with it the cuttings from the drill and is sucked upwards and through the tank, there dropping the cuttings and separating from same in its flow back to the pump and hole.

The tank is provided with a special test rod, by means of which the cuttings can be extracted.

safety



The ZERO HOUR BOMB protects OIL WELL INVESTMENTS

The average cost of an oil well is around $35,000. Whenever any uncertain and unreliable detonating device is run into any well in an attempt to explode a shot, the entire investment in that well is endangered.

Shooting hazards due to dangerous detonators are *unnecessary*. The Zero Hour Electric Bomb takes the risk and uncertainty out of oil well shooting by putting off any shot *safely* and *surely*.

This bomb is so designed and constructed that it will NOT explode before the time for which it is set to explode. And it WILL put off the shot under any conditions of heat, pressure or magnetic influence, or when buried (with the shot) under cavings.

Operators nowadays realize that it is not sound business to attempt to use any detonating device which may damage or entirely ruin a well through premature explosion, or which may cause costly delay through failure to put off the shot. A large number of the major companies now specify that *every* shot in *every* well MUST be put off with a Zero Hour Electric Bomb.

Other operators and men who are responsible for the safety of wells can get an idea of the dependability of the Zero Hour Bomb from the fact that it has been used to put off successfully more than 4000 shots.

The Zero Hour Electric Bomb, Standard Type, has a setting range of 1 to 11 hours; Special 22-Hour Type has a setting range of 12 to 22 hours. Both types are furnished with either 3¼" O. D. cast iron shell, or with 2½" O. D. seamless tubing steel shell with cast iron cap.

ZERO HOUR TORPEDO COMPANY

408 Cosden Bldg., Tulsa, Okla.

Day Phone 2-9612; Night Phones 3-1775, 3-7650, 2-6097

BORGER, TEXAS
Howard Culp,
Phone 254, P. O. Box 411

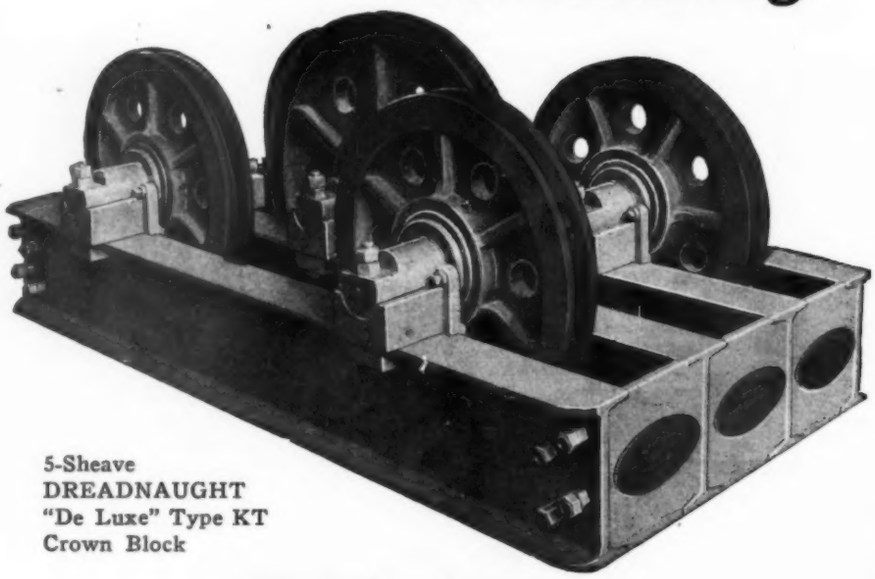
SEMINOLE, OKLA.
George Pascoe
Phone 410, 518 Second St.

Zero Hour Electric Bomb

Say you saw it in The OIL WEEKLY

DREADNAUGHT

for Drilling



5-Sheave
DREADNAUGHT
"De Luxe" Type KT
Crown Block

"De Luxe" CROWN BLOCKS and TRAVELING BLOCKS

DREADNAUGHT
"De Luxe"
Traveling Block
With automatic
grease pin

Both are

TIMKEN BEARING EQUIPPED

and "Easyontheline"

Both have Electric High Manganese Steel Sheaves with A. P. I. Standard Rope Grooves. As finely made and balanced as a good watch or a fine automobile. Made to take the punishment of any load at any speed anywhere.

Descriptive Literature and prices on request.

DREADNAUGHT
MFD. BY
BEAUMONT IRON WORKS CO.
BEAUMONT, TEXAS
U. S. A.

This Seal Appears on All Genuine Dreadnaught Equipment, and is a Guarantee of Quality.

Distributed by FRICK-REID SUPPLY CO., West of the Mississippi—Stores Everywhere

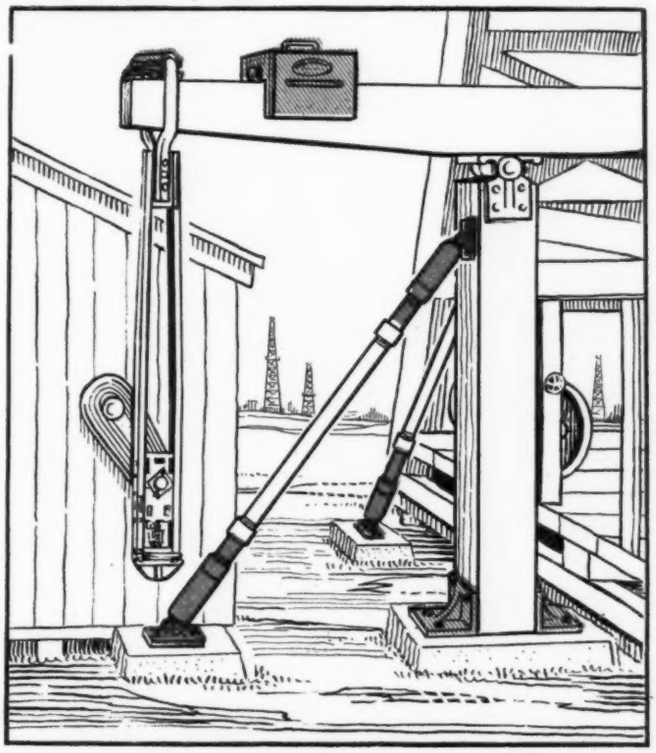
DREADNAUGHT

for Pumping

YOUNT
Tubular Sampson Post Braces

HINGED JOINTS permit the Yount Brace to be set at any desired angle. Right and left hand threads in alternate clevis castings make it easy to keep the braces always taut and rigid. Taper pin joints leave no play in the assembly. Easy to install. Simple and permanent.

Furnished in combinations for any Draw Works or Sampson Post. Adapted to every rig, drilling or pumping, cable or rotary. Convenient for the temporary set-up. Economical in the end. Booklet on request.

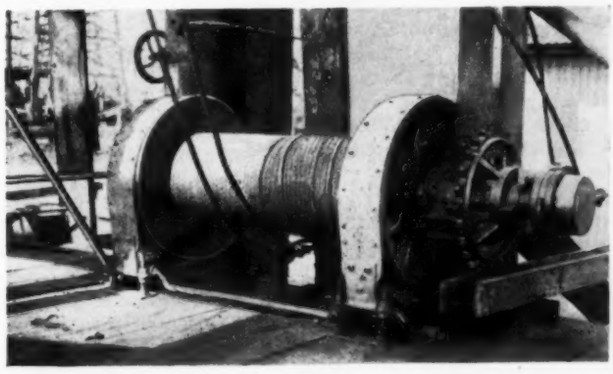


YOUNT
Pumping Counter-Weight
(Patented)

ROLLERS make this Counter-Weight adjustable, easy to move to the most efficient position for balance. Two clamping screws anchor it to the beam. When pulling rods or tubing the Counter-Weight may be rolled to the center directly over the saddle and clamped. The beam may then be swung out of the line of operation without dismounting the Counter-Weight. Makes the pumping stroke smooth and vibrationless. Made for any walking beam.

YOUNT
Oscillating Stirrup Bearing
(Patent Applied For)

THIS universal bearing, made of electric steel and good for a lifetime of service, corrects alignment in walking beam or crank. For drilling it is of special advantage, for one man may engage or remove the pitman from the wrist pin without effort. Greatly reduces friction and eliminates the twisting action in the pitman. Efficiently lubricated. Illustrated folder on request.



DREADNAUGHT
Pumping Hoist

Write for further information and Prices on any DREADNAUGHT PRODUCTS

DREADNAUGHT
MFD. BY
BEAUMONT IRON WORKS CO.
BEAUMONT, TEXAS
U.S.A.

The Rig for well maintenance operations. Simple, compact, practical. DREADNAUGHT Quality Throughout.

This Seal Appears on All Genuine Dreadnaught Equipment, and is a Guarantee of Quality.

Distributed by FRICK-REID SUPPLY CO., West of the Mississippi—Stores Everywhere

New Guiberson Products

THE GUIBERSON CORPORATION

Guiberson Corporation, Box 1106, Dallas, Texas, announces two new products: the disc bit and a tubing spider.

GUIBERSON DISC BIT

Disc Bit

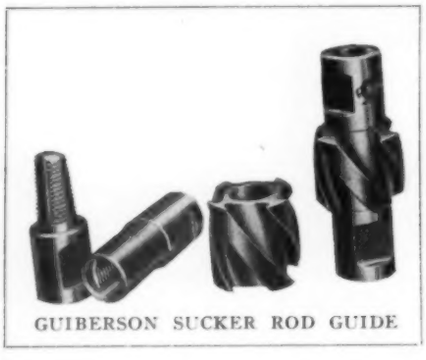
The bit has four cutters or discs. The disc axes are offset from the true radius of the bit so that the discs have full circumferential travel; reamers in cheek plates keep the hole reamed practically to the bottom; outside cutters are on different axes from the inside cutters, rendering space between cutters self-cleaning; flushing channels extend to extreme bottom of the bit, so that water cleans the extreme bottom of the hole for the cutters; head of the bit is flat on two sides providing ample water passage. The bit was designed for either hard or soft formations.

Sucker Rod Guide

The Guiberson bronze sucker rod guide is being offered in sizes and styles to fit all sizes and makes of sucker rods.

Function of the guide is to hold the rods centered in the tubing and to reduce tubing wear by providing a bronze-to-iron bearing between rods and tubing.

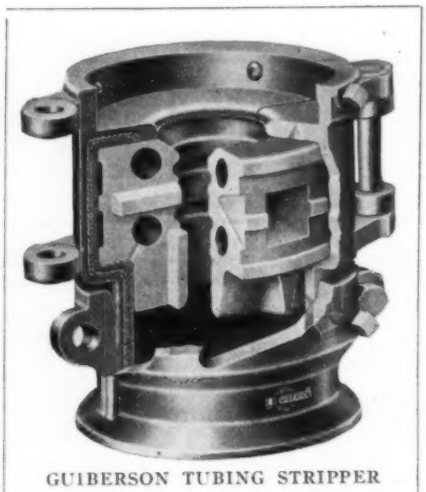
The spiral design provides passage for the fluid and gives a complete circumferential bearing. The guide has sufficient churning action to keep paraffin stirred up and prevent its deposit on the tubing. The direction of the spirals tends to tighten the couplings on the down stroke through the fluid.



GUIBERSON SUCKER ROD GUIDE

Tubing Spider

In the new tubing spider rubbers are of a durable composition and are made resilient by the incorporation of properly distributed air-pockets or compression chambers. The rubbers hug the tubing tightly, preventing the escape of gas or oil.



GUIBERSON TUBING STRIPPER

The stripper is made in two interchangeable halves, hinged together. Two convenient handles are lifting it to position and closing it around the tubing. It is then latched and dropped into the adapter where a turn to the left locks it in place. It can be opened quickly to admit the tubing catcher and can be quickly replaced after the catcher has passed.

More information will be mailed on request to the company.

Pyle-National Products

THE PYLE-NATIONAL COMPANY

The Pyle-National Company, 1334-1358 N. Kostner Avenue, Chicago, has developed a new turbo-generator and has improved its line of flood lights.

Turbo-Generator

The new unit which is known as Type M-2-S, is designed to operate on steam and is suitable for use under the most adverse conditions in furnishing light or current for portable tools in oil fields, construction work and isolated stations where generating equipment must be easily portable, extremely rugged and yet at the same time able to deliver constant, automatically regulated current.

The lew large capacity permits the unit to handle a continuous load of sixty 40-watt lamps or twenty 500-watt watt lamps or any combination having a demand of 2½ k.w. If, as is becoming increasingly common on construction work, it is desired to make use of flood light illumination, the unit will handle a pair of 500-watt flood lamps with an additional string of fifteen 100-watt lamps. On all flood light illumination it will handle five large flood lamps continuously with ease.

Since uniform steam pressures are not likely to be encountered on work which calls for this type of current generating machinery, the designers have gone to great pains to perfect an automatic regulating mechanism which will maintain uniform voltage under extreme fluctuations of steam pressure or load. The new control is said to hold voltages constant to within three volts of normal, even though the steam pressures vary.

This wide range of automatic regulation is valuable where current is demanded for electrical tools, since the fluctuating load occasioned by the demand of the tools will not dim the lights and disrupt the flow of current. It also practically eliminates all necessity for adjustment or tampering with the regulating mechanism. If it is necessary to operate on steam pressures outside of the range mentioned above, a slight adjustment makes the wide range of regulation available over practically any group of pressures.

Only sufficient steam is admitted to handle the load as it is called for. The steam supply follows accurately with the fluctuations of the current.

The unit is also designed to operate continuously over long periods without attention to either adjustment or maintenance. Heavy duty ball bearings and large capacity oil chambers permit this. Practically the only maintenance necessary is to supply a little additional oil when the unit is transferred to a new job. At the same time it is completely accessible.

Careful attention has been given to waterproofing and weatherproofing so that dirt and moisture will not interfere with operation.

Another new feature is the mounting of an enclosed fuse panel and safety switch box as an integral part of the unit.

Flood Light Development

According to the most recent developments in scientific floodlighting, the most efficient practice is to place the lens in the door of the projector. A complete range of such lenses has been perfected by the Pyle-National Company.

One new kind of lens projects a rectangular shaped beam in which all the light is concentrated, and the beam is cut off sharply at the edges. Other new types produce what is known as circular diffusion of a 45 degree arc.

PYLE-NATIONAL TURBO GENERATOR

Newest projectors are of the non-ventilating type. The best types have the heat of the lamp carried away by radiation, keeping the projector air-tight and preventing the entrance of smoke, dirt and moisture.

Material which will not easily corrode is used in all the Pyle-National floodlights. Bronze and aluminum are used throughout.

More information on both products will be supplied by the company, on request.

Fishing Tools Drilling Tools

AMERICAN IRON & MACHINE WORKS, INC. · OKLAHOMA CITY ·

Above. Cut away view of the American Rock Bit Cone Fishing Socket.

A New Tool
with a Single Purpose

Realizing the need for a tool that will get rock bit cones—regardless of how much they are worn—The American organization has just perfected a tool for that single purpose—The American Rock Bit Cone Fishing Socket. (Note the cut away illustration to the left.)

This new single purpose tool is a sure one on the job. Regardless of the condition of the cone lost off in the hole—no matter how much it is worn—the American Rock Bit Cone Fishing Socket goes down and gets the cone. It never fails.

Drillers Marvel at the manner in which they can use this new tool . . . spudding through bridges . . . rotating by boulders and tight places . . . and all hazards in fishing for cones.

Simply get the tool on the bottom of the hole . . . rotate . . . and you'll soon have your lost cone.

We will gladly furnish upon request detailed information upon this new single purpose tool . . . or your nearest supply company can show you this tool.

American Oil Field Tools, are known the world over for their perfect performance, their reliability to do the job for which they are designed. A complete list of American Tools is below. An illustrated catalog will be forwarded you upon request.

American Iron and Machine Works, Inc.

MANUFACTURERS OF OIL FIELD EQUIPMENT

OKLAHOMA CITY, OKLAHOMA

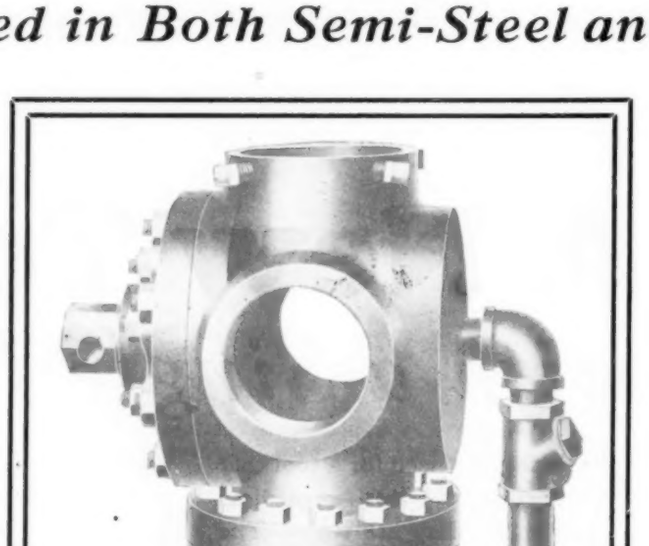
American Oil Field Equipment

American Releasing and Circulating Overshots.
American Rock Bit Wrenches
American Milling Shoes
American Flexible Couplings for Rock Bit Lubricators
American Steel Tool Houses
American Forged Steel Wall Hooks
American Rock Bit Breakout Blocks
American Rock Bit Cone Fishing Sockets
American Paraffin Bits
American Female Die Nipples
American Tapered Taps
American Forged Steel Subs
American Rotary Shoes
American Cone Fishing Baskets
American Steam Lubricators
American Combination Reverse and Throttle Levers
American Side Tracking Mills
American Rock Bit Wash Pipe Attachments
American Rotary Milling Tools
American Myracle Sucker Rod Sockets
American Surface Bit Attachments for Rock Bits
American Drill Pipe Float Joints

The Arbon Control Casing Head

Made to Stand the "Gaff"

Furnished in Both Semi-Steel and Steel—



The only Control Head made in both Semi-Steel and All-Steel with a high pressure head testing as much as 3,000 pounds cold water pressure. The Semi-Steel Control Head is fitted with rotating valve, turning on anti-friction bearings, which allows the valve to be opened or closed and the well controlled regardless of the pressure upon the plug.

An outstanding feature of the ARBON Control Head is the built-in Steam Snuffer, a protection in case of fire.

Made in Three Types

Semi-Steel Tested

All Steel Tested ..... 2,000 lbs.
All Steel Tested ..... 3,000 lbs.

paco

PAUL ARBON

& Company

Tulsa, Okla.

Say you saw it in The OIL WEEKLY

Other Paul Arbon Products

Oil Field Equipment manufactured by this Company has been developed to meet a specific need in the Industry and is sold with the assurance that ARBON PRODUCTS are mechanically correct both in construction and in actual performance.

This broad Guarantee goes with every product bearing our name and trade-mark.

BURNS SWIVEL SOCKET

STANDLEE SWIVEL SWAB

PROSSER SWIVEL SOCKET

EDGAR ALLEN TOOL STEEL

STANDLEE TUBING OIL SAVER

CINCINNATI RUBBER PRODUCTS

STANDLEE WIRE LINE OIL SAVER

paco

PAUL ARBON
& Company
Tulsa, Okla.

Say you saw it in The OIL WEEKLY

Neilan-Schumacher Items

NEILAN-SCHUMACHER CO.

Neilan, Schumacher and Company, Los Angeles, announce the perfection of a number of items for use in connection with air or gas lift.

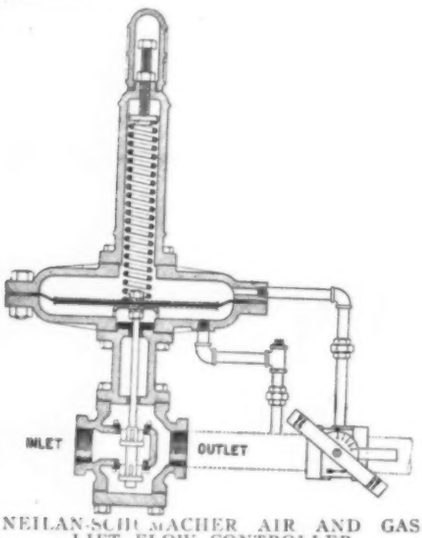
Boiler Gas Regulator

Features of the boiler gas regulator include ball bearing construction, over-

NEILAN-SCHUMACHER BOILER GAS REGULATOR

size valve ports, large capacity, extreme sensitiveness, and accuracy.

According to the manufacturers, the regulator will maintain a constant steam pressure in boilers regardless of varying load conditions. The rise and fall of the steam pressure governs the movement of the valves. The regulator is made for boiler pressures of 75 to 125 pounds and from 100 to 175 pounds.



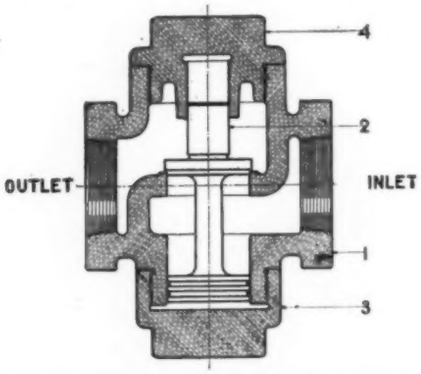
NEILAN-SCHUMACHER AIR AND GAS LIFT FLOW CONTROLLER

Air and Gas Lift Flow Controller

The controller is differential diaphragm regulator with balanced valves and an adjustable orifice valve. Adjustment can easily be made for varying the flow of air or gas to the well. The controller is suitable for pressures up to 1000 pounds. With the outfit, wells can be flown continuously.

Double Cushioned Noiseless Check Valve

The Neilan hydraulic double cushioned noiseless check valve was



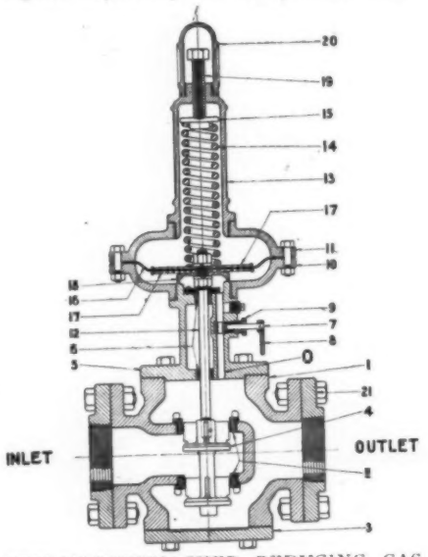
NEILAN-SCHUMACHER DOUBLE CUSHIONED NOISELESS CHECK VALVE

designed for working pressures up to 1500 pounds. It is cushioned by means of two dash-pots.

Sturdy body construction is attained by the use of hard bronze. Discs and pistons are of hardened steel. Pistons are hand fitted.

Reducing Gas Regulator

The reducing gas regulator was designed especially for compressor serv-



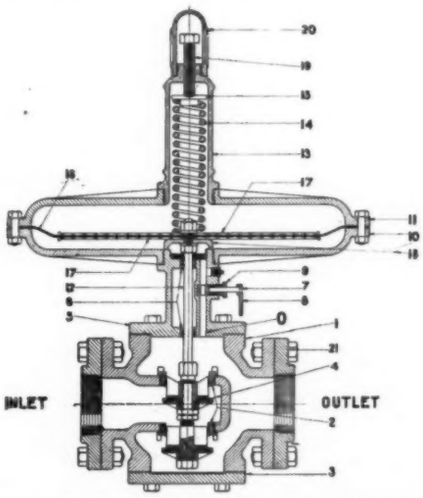
NEILAN-SCHUMACHER REDUCING GAS REGULATOR

ice. It can be placed in the suction intake line to the low pressure cylinder of the compressors. It is claimed that the regulator will reduce inlet pressures up to 400 pounds, to outlet pressures from five pounds to 15 pounds, and from 15 pounds to 75 pounds.

Gas Engine Fuel Regulator

The gas engine fuel regulator has balanced valves with composition discs which seat on raised tongue seats. Working parts are non-corrosive. Working parts are enclosed from the weather. The regulator supplies gas to engines at any pressure from one to three ounces. Inlet pressure to the regulator can be as high as 60 pounds. If the engines are down, the regulator will shut off tight and prevent pressure from building up between the regulator and the engines.

More specific information on all these items can be obtained from the company, by request.



NEILAN-SCHUMACHER GAS ENGINE FUEL REGULATOR

TAG-Isom Calculator

C. J. TAGLIABUE MANUFACTURING COMPANY

C. J. Tagliabue Manufacturing Company, 18-33rd Street, Brooklyn, New York, is putting on the market the TAG-Isom Blending Calculator. It is claimed that this instrument solves the blending problem, either on the basis of viscosity or gravity.

The calculator is about 13½ inches long and six inches wide.

On one side are the viscosity scales, one for oils at 100 degrees F., and the other for oils at 210 degrees F. The other side used for the gravity calculations, both A. P. I. and specific gravity scales.

The outfit is substantially built and is durable as it has no parts to wear out.

Theft Proof Sockets

REN MANUFACTURING COMPANY

Prevention of lamp thefts from weatherproof sockets is claimed for the Ren-Locks made by the Ren Manufacturing Company, Lyceum Building, Winchester, Massachussetts.

The Ren-Lock consists of a coiled spring and a grooved ring. The lock grips the base of the lamp, thus making one size Ren-Lock fit all sizes of lamps having the medium size base. The lock can be used repeatedly.

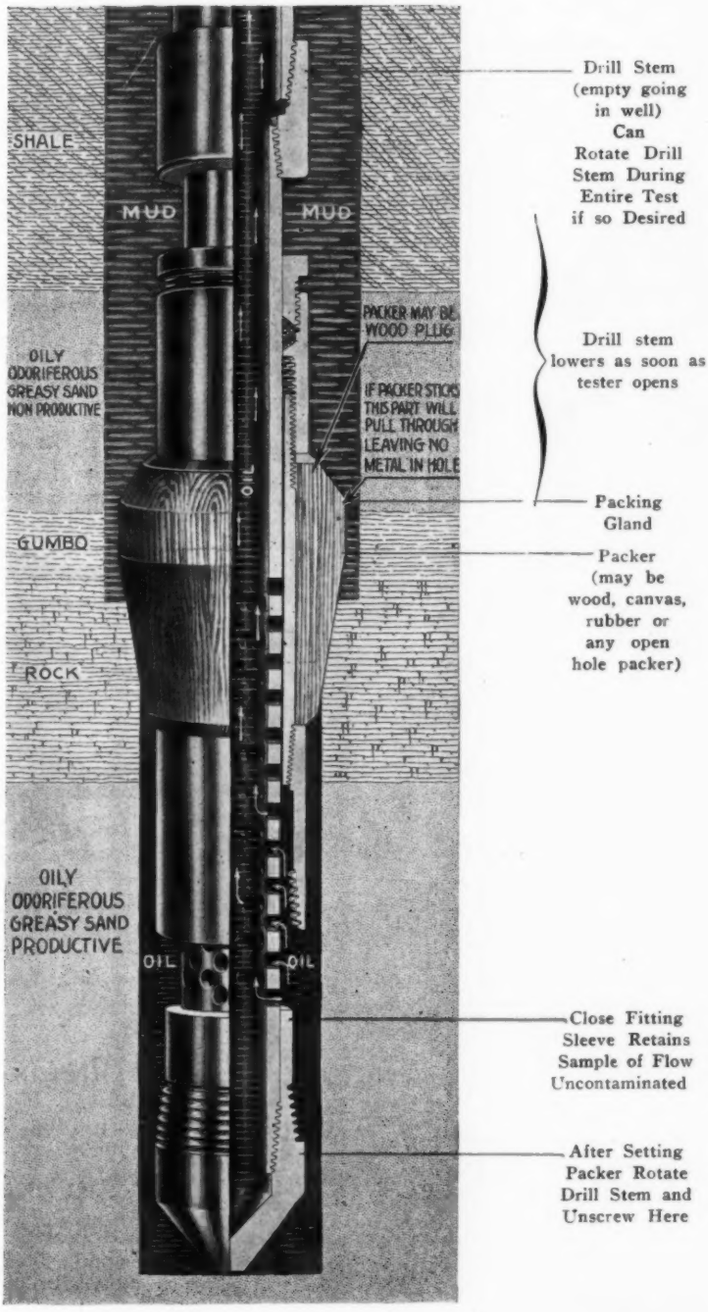
Further information can be obtained from the company, on request.

Test *as you* Rotate

with an "H-E" improved Flow Tester — KNOW, without guessing, what the "SAND" contains—leading companies are enthusiastic about the performance of this remarkable tool, with its exclusive features.

Compare Important Advantages of the EDWARDS FLOW TESTER

1. Perforated Pipe Covered Going in Well. You want a test and not a choke-off.
2. You Can Rotate During Entire Test. You want a sample and not a stuck pipe.
3. Metal Parts of Flow Tester No Larger Than Drill Stem. You can drill smaller holes and save money.
4. No Valves that Stick in the Flow Tester. You know when the Flow Tester opens.
5. Perfect Seal Below Packer When Coming Out. You retain an uncontaminated sample.
6. Mud Circulation if Desired After Test is Started. You have simplest and best in the Flow Tester.
7. Houston Engineers First Offered Trade Well Testers in 1925. To date of this NO H. E. TESTER lost in well.
8. Improved tester has choker, all sizes, and will not damage the sand tested.
9. You can circulate and still retain uncontaminated sample.
10. Has dump valve; can empty drill stem coming out of hole if desired.


SHALE
MUD
MUD
PACKER MAY BE WOOD PLUG
OILY ODORIFEROUS GREASY SAND NON PRODUCTIVE
IF PACKER STICKS THIS PART WILL PULL THROUGH LEAVING NO METAL IN HOLE
OIL
GUMBO
ROCK
OILY ODORIFEROUS GREASY SAND PRODUCTIVE
OIL
OIL
Drill Stem (empty going in well) Can Rotate Drill Stem During Entire Test if so Desired
Drill stem lowers as soon as tester opens
Packing Gland
Packer (may be wood, canvas, rubber or any open hole packer)
Close Fitting Sleeve Retains Sample of Flow Uncontaminated
After Setting Packer Rotate Drill Stem and Unscrew Here

(This device fully protected by patents.)

HOUSTON ENGINEERS, Inc.

Phone Preston 1927 HOUSTON, TEXAS, U. S. A.

Pipe Threading Tools

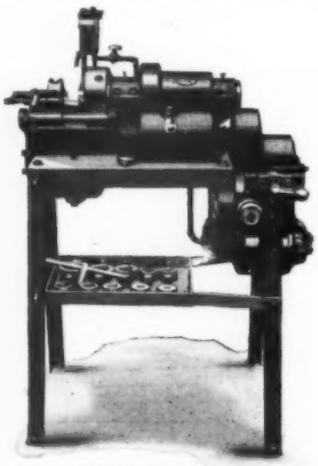
TOLEDO PIPE THREADING MACHINE COMPANY

The Toledo Pipe Threading Machine Company, Toledo, Ohio, announces three items of new equipment, introduced recently.

Toledo 1000M Pipe Machine

Capacity of the 1000M pipe machine is from one-half inch to two-inch pipe. Die heads and dies for threading one-fourth and three-eighths inch can be furnished at additional price.

The machine has two forward and two reverse speeds. When the machine is running idle, the forward speed for threading, in high, is 40 r.p.m.; low, 24 r.p.m. Reverse speed for backing off dies and cutting, three times corresponding forward speed.



TOLEDO 1000M PIPE THREADING MACHINE

As the machine threads, it also reams and bevels the end of the pipe.

The outfit can be changed from a threading to a cutting machine and vice versa in very short time.

The motor is one-half horsepower. It can be furnished as required, D.C. 110 volt, A.C. 110 volt, 60 cycle, or a three-phase motor of any cycle.

Floor space of the machine is 32 by 25 inches. Total height is 52 inches. The height from the floor to the spindle center is 41 inches. Weight complete is 510 pounds. Shipping weight is 630 pounds.

Work Bench and Chain Vise

The Toledo No. 9 work bench and chain vise is capable of holding pipe ranging from four and one-half inches to 12 inches in size.

The chain vise is of a special design, being built as a part of the bench, and only a part turn of the vise lever tightens the chain and firmly holds the pipe. The table top is regularly furnished four feet long and one foot wide, but can be supplied in any length, at extra cost on special order. It is equipped with a set of hardened steel jaws that may be readily replaced. A suitable pipe rest, attached to the rear end of the table supports the longer lengths of pipe.

TOLEDO WORK BENCH AND CHAIN VISE

TOLEDO AUTOMATIC PIPE CUTTER

Automatic Pipe Cutter

The new automatic pipe cutter is operated with regular ratchet handle or with a power drive. When operated with the power drive, it is claimed that the cutter will cut off two-inch pipe in 20 seconds and four-inch pipe in 65 seconds.

The outfit weighs but 65 pounds. It cuts smoothly and leaves a straight square-end cut. Its knives are fed automatically. A single hand-wheel sets them for cutting or the quick return of the knives after the pipe is cut off. One jaw centers it on the pipe and holds it true.

Additional information on all three products will be furnished by the manufacturer.

Campbell Control Items

J. A. CAMPBELL

J. A. Campbell, P. O. Box 669, Long Beach, California, announces a new relief valve and a Duplex tank vapor control.

Campbell Presorvac Relief Valve

In the new relief valve simple discs resting upon a plate are actuated by the vacuum or pressure.

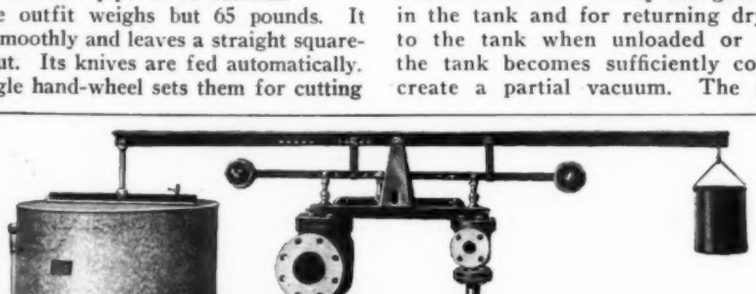
The body of the valve is made of aluminum or cast iron with interchangeable and renewable valve seats and discs of various corrosion resisting materials available in cast iron, aluminum, Bakelite, or monel metal.

Equipped with a Bakelite disc, unweighted, the valve will relieve at one-fourth inches water pressure. By weighting, any of the discs will hold a pressure to any desired point up to four inches. A monel metal screen protects the valve from the intrusion of foreign particles and also from flame propagation. A second screen can be installed for flame arresting purposes if desired. The valve is at present manufactured in four, six and eight inch sizes.

CAMPBELL PRESORVAC RELIEF VALVE

Campbell Duplex Tank Vapor Control

This device was designed to control vapors and to admit them to a vacuum line as fast as they are generated in the tank and for returning dry gas to the tank when unloaded or when the tank becomes sufficiently cool to create a partial vacuum. The apparatus is adjustable to take care of variance in range extending all the way from giving off large quantities of vapor under surging conditions to giving off a very small quantity of recoverable vapor.



CAMPBELL DUPLEX TANK VAPOR CONTROL

The unit is usually mounted on top of a tank but it can be used for handling a group of tanks, in which case it is mounted in a center location .

More information on both products will be supplied by request to the manufacturer.

New Super Baroid

NATIONAL PIGMENTS AND CHEMICAL COMPANY

National Pigments and Chemical Company, St. Louis, Missouri, announces that Baroid, the well known mud-laden fluid, will be succeeded by an improved product, Super Baroid.

The new product is more viscous than Baroid, thus insuring an almost collodial pigment with better suspension qualities, better wall building, deeper sand penetration to shut off gas.

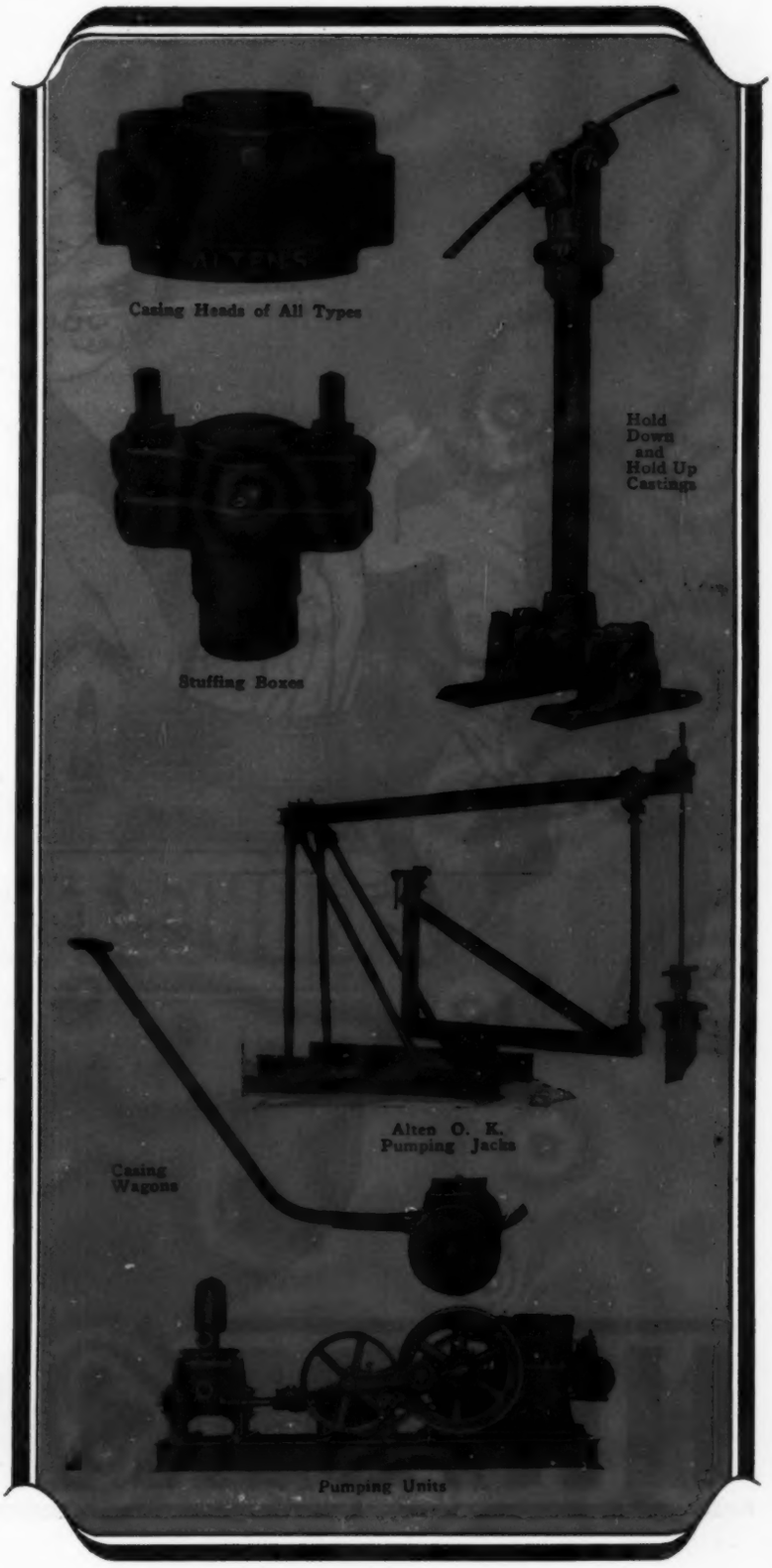
Ask any ALTEN *User*

PERFORMANCE on the job determines the real value of oil field equipment, and it's on this basis that Alten products are manufactured. For nearly forty years we have been serving the petroleum industry through the medium of exceptional products, watching the quality and superiority of these products in actual service, and constantly producing modern improved equipment for the oil fields of the world.

The remarkable performance of Alten products is due mostly to their outstanding features of construction —that and the quality of the materials and workmanship that go into them. A chain is only as strong as its weakest link, and in Alten construction every part is built to stand up under the longest, hardest service to which it can be placed.

Ask any user of Alten products about their quality and service. Our reputation is based upon their answer. As a result, we take particular pride in our manufacturing to assure a high grade, long-lasting and smooth-operating product.

At Your Supply House, or Write Us Direct



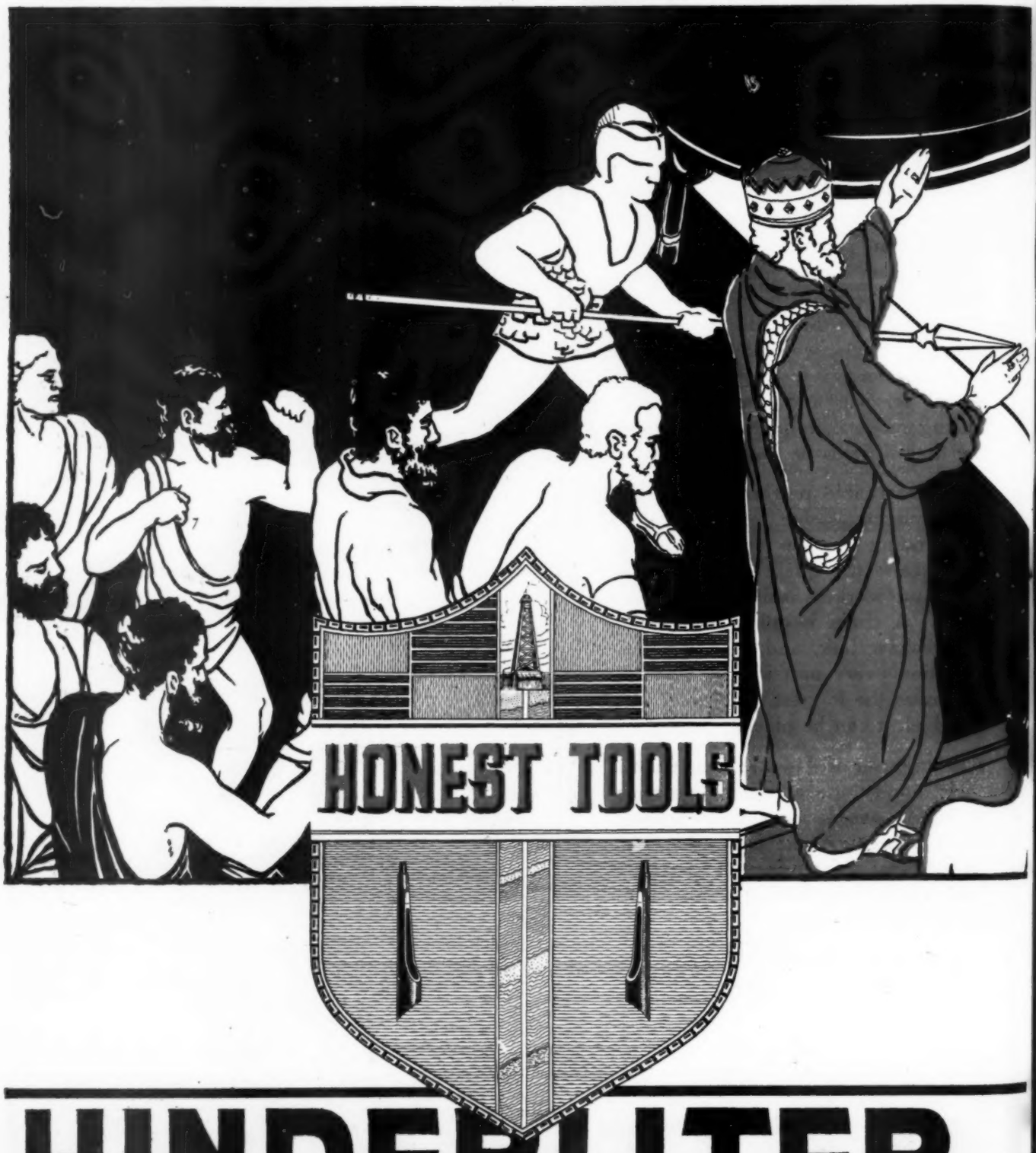
ALTEN'S

Foundry and Machine Works

Established 1889

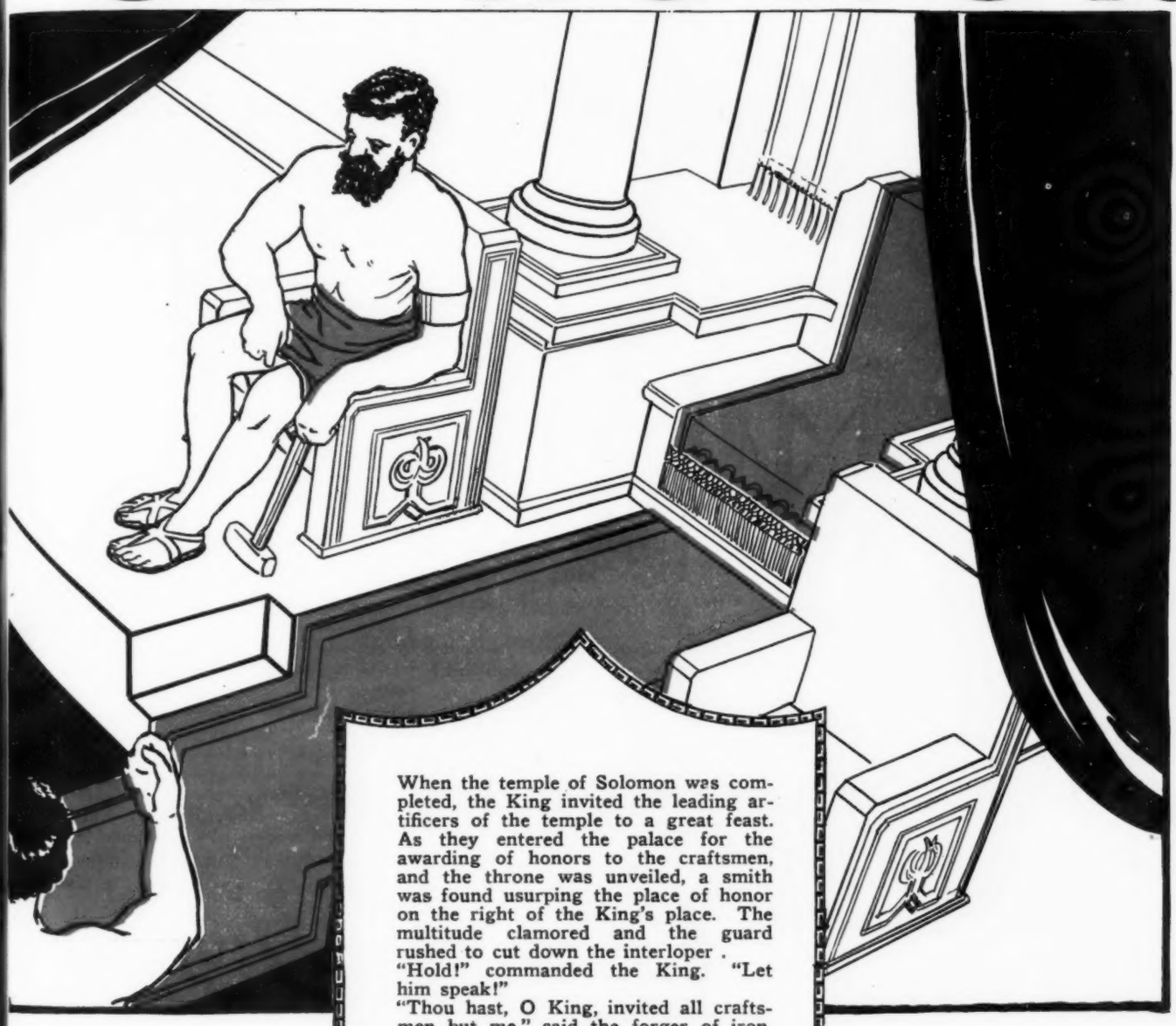
LANCASTER . . . OHIO

THE PLACE



HINDERLITER

OF HONOR



When the temple of Solomon was completed, the King invited the leading artificers of the temple to a great feast. As they entered the palace for the awarding of honors to the craftsmen, and the throne was unveiled, a smith was found usurping the place of honor on the right of the King's place. The multitude clamored and the guard rushed to cut down the interloper .
"Hold!" commanded the King. "Let him speak!"
"Thou hast, O King, invited all craftsmen but me," said the forger of iron, "yet, how could these builders have raised the temple without the tools I fashioned"
"True!" decreed the Wise King. "The maker of tools has won the place of honor!"

TOOL COMPANY

TOP SECTION OF NATIONAL TURNBUCKLE DERRICK COMPANY'S NEW STEEL DERRICK

New Steel Derrick

NATIONAL TURNBUCKLE DERRICK COMPANY

National Turnbuckle Derrick Company, 415 Wright Building, Tulsa, has perfected a new steel derrick for the oil industry.

The main derrick legs and reinforcing legs are of tubular construction conforming with A. P. I. standards. The top is of heavy I-beam and channel iron construction. Derrick leg couplings and reinforcing legs attachments are of malleable iron castings. The coupling serves as a means of attaching the abutting ends of the sectional leg as well as a spacer for the reinforcing leg, with additional means for clamping the same to the main derrick leg. To evenly distribute the load and utilize the full strength of the reinforcing legs, two sliding wedges are provided for insertion just under the top casting and at the top of the reinforcing leg, which, when drawn into their proper position distributes the load evenly.

More information will be supplied by the company on request.

Improved Reel Support

The all-steel sand reel support recently designed and patented by Carl H. Bessee of the National Turnbuckle Derrick Company, has a number of improved features, as stated by the manufacturers.

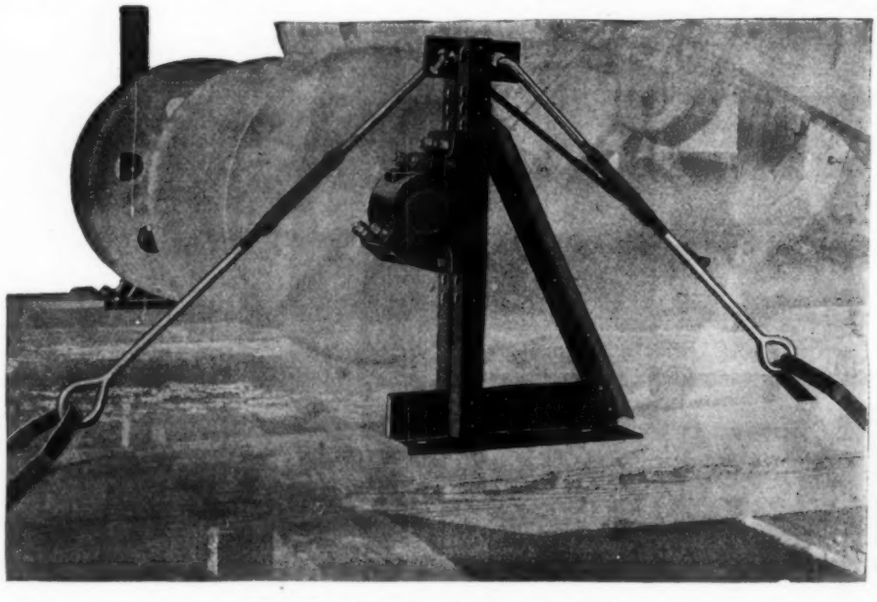
The support consists of a metal base plate on the knuckle block side to provide for the forward and backward adjustment of the swing level to which is attached a metal bearing box with provisions for a wide range of vertical adjustments.

The upright support and brace is made of four by three-inch by one-half-inch thick angle iron, which is bolted to an angle iron plate at the base in which holes are provided for the proper adjustment of this member, either forward or backward. The base plate is attached to the wood sill by means of anchor bolts. The reel post is also equipped with an adjustable bearing box.

An oil chamber in the bearing box provides for constant lubrication of the sand reel shaft bearing. The support is easily and quickly assembled for use.

Close adjustment is also a feature of this support, inasmuch as the sand reel can be adjusted to the face of the band wheel to give proper friction. Vertical adjustment also insures proper spooling of the sand line on the drums.

More complete information is available on request, from the company, Tulsa.



BESSE IMPROVED REEL SUPPORT

Penn Electric Switch

PENN ELECTRIC SWITCH COMPANY

The Penn Electric Switch Company, Des Moines, Iowa, is putting on the market a magnet switch for temperature, pressure, or vacuum service.

The switch can be furnished to either open or close an electric circuit, as may be required with a change of pressure, vacuum or temperature.

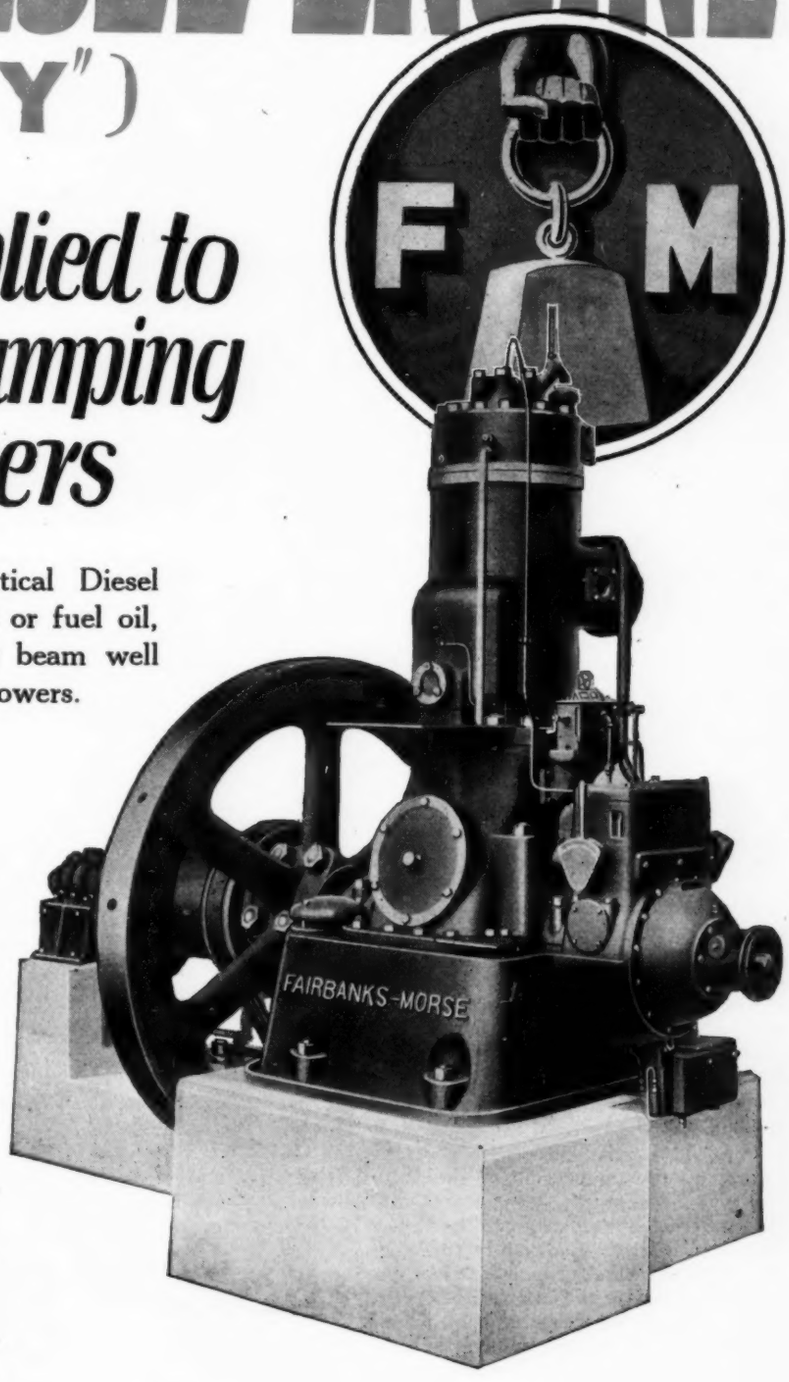
One type, L, is offered for applications where extremely close differential is required between start and stop positions. The differential on temperature can be varied from a minimum of two degrees to a maximum of eight degrees. When furnished as a pressure switch, the differential can be varied for a minimum of one pound to a maximum of five pounds.

Patented contact construction used in the switch consists of a permanent magnet working in conjunction with a movable armature, which in turn, is actuated by means of a sylphon bellows. A lost motion at the contacts insures that each opening of the circuit will be with a snap action, and the action of the magnet on closing, insures positive snap movement during that cycle of the operation. The auxiliary contacts are made of silver and are located directly between the poles of the permanent magnet. The blow-out effect of the magnet makes it possible to break extremely heavy currents instantly.

Additional information will be furnished on request.

THE DIESEL ENGINE
(TYPE "Y")

Now - applied to beam well pumping and powers



The FAIRBANKS-MORSE Vertical Diesel Heavy Duty Engine, using crude or fuel oil, has been designed especially for beam well pumping, swabbing, drilling, or powers.

SIZES: 40, 60, and 80 H. P. (continuous rating).

WIDE SPEED RANGE (100 to 300 R. P. M.) **UNDER GOVERNOR CONTROL.**

SUCCESSFUL at low speeds. Long life at high speeds.

CLUTCH: Timken Roller Bearing Clutch, or O. C. S. Countershaft Clutch are optional equipment.

If CONTINENTAL Sells It, There Is No Better"

THE CONTINENTAL SUPPLY CO.
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Export Office: 74 Trinity Court, New York
London Office: 316-317 Dashwood House, Old Broad St., E. C. 2

The Continental Supply Co., Ltd.
69 Thomas Block, Calgary, Alberta, Canada

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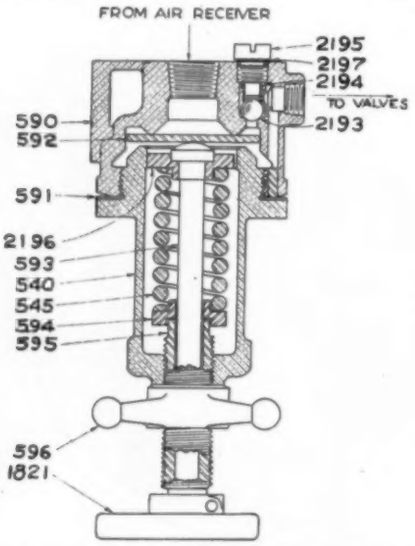
Say you saw it in The OIL WEEKLY

Differential Unloader
CHICAGO PNEUMATIC TOOL COMPANY

The Chicago Pneumatic Tool Company, 6 East 44th Street, New York



CHICAGO PNEUMATIC DIFFERENTIAL UNLOADER

City, New York, has recently developed a differential unloader for its compressors.

The valve 592 is a single plate of stainless steel ground to a flat surface. The diameter is also ground to fit the cap, 590, with a few thousandths clearance. The edge is well rounded to prevent its sticking as a result of cocking on its seat. Cap 590 contains a ball check valve 2193, spring 2194, and a ball check screw 2195. The flanges by which the unloader is attached to the compressor or panel are on the cap. This permits dismantling the unloader for examination or cleaning without disturbing the piping or valves. The device operates with a five-pound range between unloading and loading the compressor. An unloader is set to unload generally with 100 pounds and the reloading pressure is five pounds lower, or 95 pounds.

As the air pressure rises to 100 pounds the pressure on the upper side of the valve 592 balances that of the spring on the under side of the valve 592 and air escapes past the seat into the annular space around the outer edge of the disc. Because of the close fit of the disc in the cap 590 and the ball check valve, the air cannot escape and a slight pressure is built up, which, acting upon the surface of the disc, balances the pressure of the spring on the lower side of the disc and the disc moves down against the seat in the body of 540. The ball check valve is then exposed to full receiver pressure and being held on its seat by a very light spring, immediately moves off the seat and uncovers a quarter-inch hole for air to pass through on its way to the unloading inlet valves.

Upon a drop of receiver pressure equal to the range, in this case, five pounds, the pressure of the spring 545 balances the pressure due to the air on the disc and causes it to permit leakage past the lower seat into the space around the stem. This leakage is restricted slightly by the upper spring holder 2196, which is a moderately close fit in the body 540 and a slight over balancing pressure is built up which causes the valve disc 592 to return to the upper seat with a positive movement and air is vented from the unloading piping past the upper spring holder.

The action of the valve in opening and closing is positive and because of the absence of tight lapped fits its response to pressure changes is accurate.

The unloader is now built for standard pressures from 50 to 125 pounds, for low pressure work of 40 pounds or less, and for high pressure work up to 500 pounds.

Further information can be had from the company, on request.

O'Bannon Specialties
WALTER O'BANNON COMPANY

Walter O'Bannon Company, 400 S. Rockford Street, Tulsa, announces the O'Bannon improved universal sucker rod socket and the O'Bannon safety tubing hook.

IMPROVED OBANNON SUCKER ROD SOCKET

Improved Universal Sucker Rod

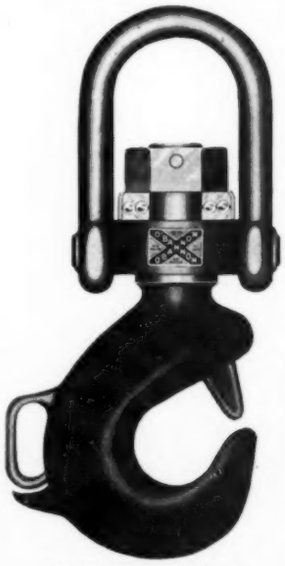
This socket has two pairs of slips, upper and lower. The upper slips catch rod breaks and the lower slips catch box breaks.

The upper slips work in a separate inner bowl, which also holds the lower slips in line, causing them to engage box breaks evenly. A spring expansion ring works in the grooved recess of the upper slips and holds them in line.

The inner bowl also limits the upward travel of the lower slips so that a portion of their length is always in the taper of the outer bowl. This and the relatively quick taper of the slips and bowl permits catches to be disengaged easily. The upper slips also work in a quick taper.

Safety Tubing Hook

The Safety Tubing Hook is a heavy hook, weighing 160 pounds, is made of alloy electric steel and is heat-treated. It has a rated or working capacity of 50 000 lbs.



O'BANNON SAFETY TUBING HOOK

Swiveling under full load is taken care of by a big double row ball bearing and a heavy forged bail.

The load is held on the hook by a latch, or guard, which extends across the hook opening. The latch is automatically released by the movement incident to hooking on or off.

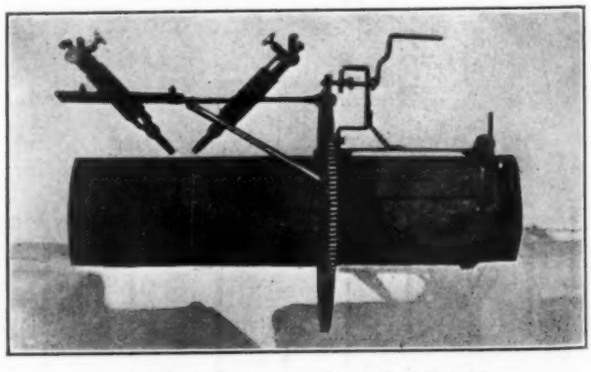
On the rear of the hook, the body is extended under the operating handle to form a guard.

Further descriptive matter will be provided upon application.

Pipe Cutting Machine
OXWELD ACETYLENE COMPANY

Oxweld Acetylene Company, Carbide and Carbon Building, 30 East 42nd Street, New York, announces the Wagner Pipe Cutting Machine for use wherever it becomes necessary to cut pipe.

Essentially the machine consists of two gears and a framework upon which two cutting blowpipes are mounted. When the crank handle is turned, the rotation of the small gear meshing with the large gear causes the carriage supporting the two blowpipes to revolve about the pipe. The blowpipes may be adjusted to any angle of cut desired, although 45 degrees is the usual bevel. Within reasonable limits the distance between the cuts may also be varied. The use of specially designed cutting blowpipes provides a compact unit, which eliminates much extra bell-hole digging. By an arrangement of different



WAGNER PIPE CUTTING MACHINE

NEW ACME SLUSH PUMP

14X7¼X16-15X7¼X18

Operators Say "It's a Wonder-"

The new Titusville Acme Slush Pump has been designed to meet in every way the altered requirements of Modern rotary drilling. It is built for 1000 lbs. working pressure, and is wonderfully powerful, fast, and efficient.

Among its newer mechanical advantages are: Floating-type spool cross-head; one-piece rocker arms; pump cylinders separate and interchangeable; direct flow of fluid straight through; grease gun connection at all pins. Ask about this *better* pump.

"If CONTINENTAL Sells It, There Is No Better"

THE CONTINENTAL SUPPLY COMPANY
General Offices: St. Louis
Export Office: 74 Trinity Court, New York
London Office: 316-317 Dashwood House, Old Broad St., E. C. 2
THE CONTINENTAL SUPPLY COMPANY, LTD.,
69 Thomas Block, Calgary, Alberta, Canada

CONTINENTAL

Say you saw it in The OIL WEEKLY

sized internal shoes, which fit the saddle, the machine may be used on more than one size of pipe. thus the same unit may be used for cutting four-inch, six-inch and eight-inch pipe merely by changing the internal shoe. Another machine of a larger size is furnished for 10-inch, 12-inch and 14-inch pipe.

The device is easily portable from cut to cut. The eight-inch machine weighs less than 80 pounds and is readily divided into two sections for convenience in carrying.

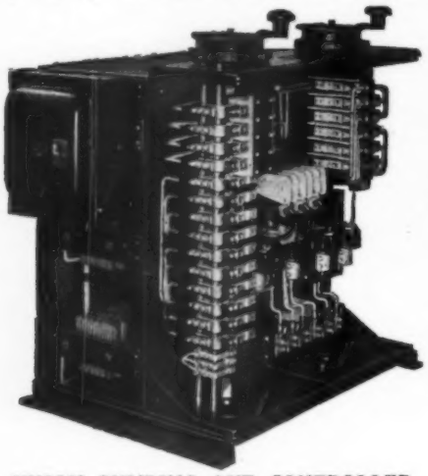
One of these machines may be used in connection with cylinders of oxygen and acetylene mounted on a hand truck, or two of the cutters may be supplied by means of a generator and oxygen cylinders carried on a wagon or motor truck.

Information concerning the machine can be had from the company.

Special Pumping Outfit Controller

UNION ELECTRIC MANUFACTURING COMPANY

A special drum controller for oil field pumping and drilling units using elec-



UNION PUMPING OUT CONTROLLER

tricity is announced by the Union Electric Manufacturing Company, Milwaukee, Wisconsin.

The outfit has been designed for a particular service and duty. The control unit consists of a substantial angle iron framework, of which the upright supports are two by two and one-fourth inches; the cross bars one and one-half by one and one-half by three sixteenths inches; the side braces and gridiron supports three by one-eighth inches. The floor mounting angles are two by one-fourth inches and are are braced with seven-sixteenths inch cold rolled tie rods. The conduit cover, the top plate cover, the perforated metal enclosure, and also the back mounting plate are of No. 14 gauge steel. To the angle iron frame is bolted the bottom and top castings for the support of the drum cylinder shafts.

The entire unit is riveted at the corners and is designed for rough handling.

The top head casting has a removable top plate around the drum cylinder shaft, so that the drum cylinder can be removed entirely from the unit without disturbing any other parts.

The operating lever and rope wheels are of cast steel; the indicating bands attached to the bottom of the rope wheel is of cast bronze, the numerals and letters being large and readable from the headache post.

The fingers used throughout are all one inch wide, 200 ampere capacity and are of the Union patented Hercules nonstubbing type.

Grid resistors are mounted in the rear.

More detailed information is available from the company, on request.

Nye Power Threader

NYE TOOL AND MACHINE WORKS

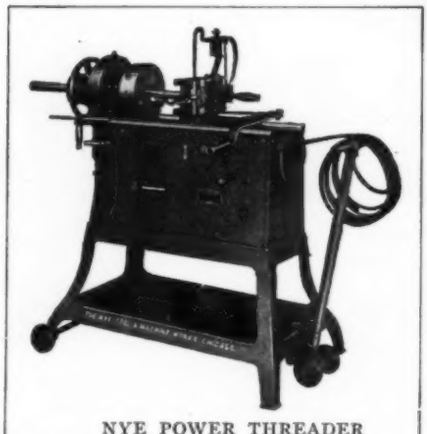
The new Nye power threading machine perfected by the Nye Tool and Machine Works, 4120-30 Fullerton Avenue, Chicago, is recommended as a portable machine of great adaptability.

The machine has ample power and is sufficiently portable to be taken out on any job. It is on truck wheels and can be easily taken from place to place and operated from any ordinary lamp socket.

The chuck is a patented quick centering device. The reaming device is automatically self-centering.

The machine contains a reservoir of four gallons of lard oil. The oiling device pumps oil onto the pipe continuously while in operation. All gears are submerged in motor oil.

The machine carries a grinding attachment with a six by three-fourths grinding wheel which operates at 2600 r.p.m.



NYE POWER THREADER

Nye Bit Brace Reamer

The Nye Tool and Machine Works, Chicago, has announced a new tool called the Nye Bit Brace reamer.

It is claimed that the tapered shank of the reamer will fit any standard brace bit. It reams from one-eighth-inch to one and one-fourth inches and is easily carried in the pocket.

More information will be supplied by the company, on request.

NYE BIT BRACE REAMER

FENTRESS ANTI-FRICTION PIPE SLEEVE

Fentress Pipe Sleeve

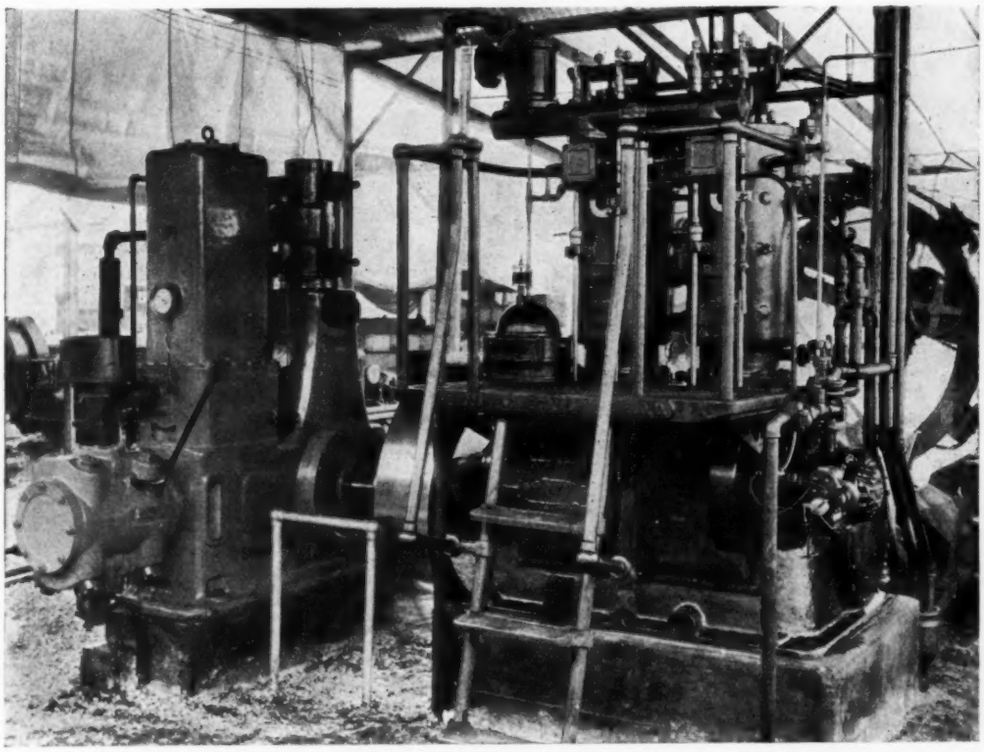
BAASH-ROSS TOOL COMPANY

Baash-Ross Tool Company, Los Angeles, is now marketing the Fentress Anti-Friction Pipe Sleeve, a device for use in reducing friction on both drill pipe and casing.

Structurally the device comprises two collars holding a hardened inner sleeve in place and forming the recess for a floating outer sleeve, mounted on ball bearings. The two collars are rigidly attached to the drill pipe by means of tapered keys, split and spread when driven tightly into the key ways. The inner sleeve is heat treated. The outer sleeve in which the three ball races are cut, is machined from a one-piece ring forging. The outer sleeve is also heat treated.

More information is obtainable from the company, by request.

Watch for Sullivan Compressors

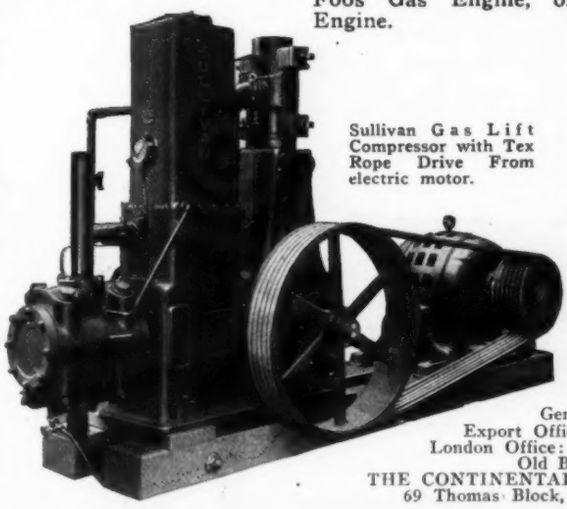


Sullivan High Pressure Gas Lift Angle Compound, Direct-Driven From Foos Gas Engine

Sullivan Angle Compound Gas and Air Lift Compressors Are Making Good in Many Localities

Oil men everywhere are being impressed with the adaptability of the SULLIVAN ANGLE COMPOUND COMPRESSOR to the varying and difficult requirements of gas and air lift service. A recent exhibition at Tulsa, showed one of these machines running in the mud, and maintaining a pressure of 500 lbs.—all day long for a stretch of ten days.

The Sullivan Angle Compound Gas Lift Compressor is a newly designed machine, embodying all the advantages of Sullivan Angle Compound Compressors, but adapted to the special requirements of oil field service. It is available in a range of capacities and pressures suited to field requirements. It is built extra-rugged to stand the continuous service and overload conditions frequently encountered. It is compact and smooth-running and can be mounted on skids and quickly transferred to new locations. It is adapted to belt or Tex-Rope drive from electric motor or gasoline engine, or to direct drive from synchronous motor, Foos Gas Engine, or Fairbanks-Morse Diesel Engine.



Sullivan Gas Lift Compressor with Tex Rope Drive From electric motor.

Small floor space, small and light foundations, low installation cost, adaptability to varying forms of drive, low power cost per unit of gas or air compressed, low cost of maintenance, reduction in care and attendance, and accessibility,—are advantages of these compressors.

Write for Catalog 83-G.

The Continental Supply Company

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Export Office: 74 Trinity Court, New York
London Office: 316-317 Dashwood House, Old Broad St., E. C. 2
THE CONTINENTAL SUPPLY COMPANY, Ltd.
69 Thomas Block, Calgary, Alberta, Canada

CONTINENTAL

Say you saw it in The OIL WEEKLY

Link-Belt Equipment

LINK-BELT COMPANY

Announcement is made by Link-Belt Company, 910 S. Michigan Avenue, Chicago, Illinois, of the introduction of its Anti-Friction Belt Conveyor Idler and Return Rolls.

Bearings are Timken tapered roller bearing type, totally encased within the roll hub.

A prominent feature of the idler is the protection afforded by a labyrinth grease seal, mounted in a grease cap which serves as an outboard reservoir and lubricates the bearing on the outside as well as on the inside, especially when the roll is on an incline. This, in turn, is protected by a deflector plate which deflects dirt, dust, grit or any foreign material away from the bearings and grease seal.

The rolls are mounted on a self-cleaning "T" base. All rolls are interchangeable. The entire frame is riveted, and is so constructed that it will not get out of adjustment readily.

All parts of the idler and return rolls are built with close working tolerances.

Alignment of bearings and a well-balanced concentrically running roll are assured by specially constructed manufacturing tools.

In machining the roll shell, special care is taken to obtain uniformity of thickness.

The heads are dished for rigidity.

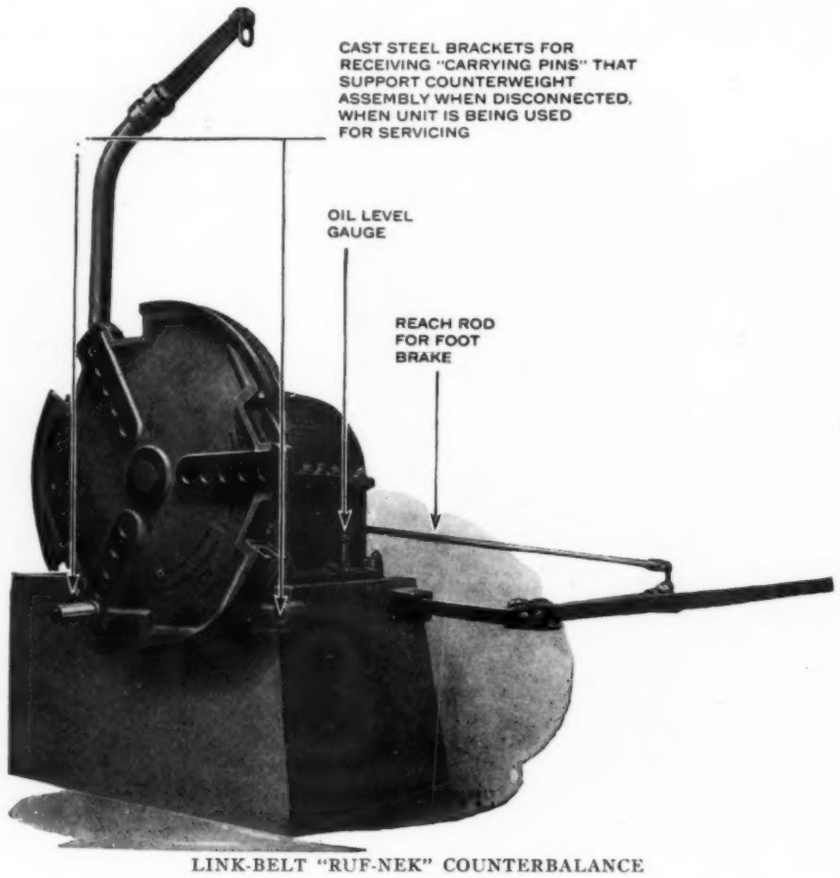
The rolls have been granitized for the handling of certain types of material such as salt, alkali, and other materials that cause incrustation.

The idler rolls are supported in malleable iron brackets having a large bearing surface for supporting them, and are not dependent upon the size of the slots. The brackets are so constructed as to support the ends of two adjacent rolls. Roll shafts are supported at both ends close to the rolls.

Rolls are spaced far enough apart to permit convenient removal from the frame by lifting them out.

Idler rolls are made in various standard lengths, and are furnished in combinations to suit standard belt widths.

The end stands are riveted to the "T" iron base, and are spread at the foot to present a rigid support for the Idler.


CAST STEEL BRACKETS FOR RECEIVING "CARRYING PINS" THAT SUPPORT COUNTERWEIGHT ASSEMBLY WHEN DISCONNECTED, WHEN UNIT IS BEING USED FOR SERVICING
OIL LEVEL GAUGE
REACH ROD FOR FOOT BRAKE

LINK-BELT "RUF-NEK" COUNTERBALANCE

"Ruf-Nek" Counterbalance

This outfit is entirely new and embodies many interesting features in its construction.

Pinions are cut integral with high carbon forged steel shafts.

Bronze bushed, ring oiling bearings, carried in a specially designed cage, permit the use of pinions of different size without changing the motor elevation.

The foot brake is operated from the derrick floor.

The flexible coupling and brake drum is combined.

The outfit is enclosed in a heavy cast iron housing thoroughly ribbed and braced.

Link-Belt Sykes herring-bone gears with continuous teeth, 30 degrees helical angle, 20 degrees pressure angle, made of electric steel, capable of carrying a continuous load of 100 horsepower, are used.

The multiple-crank disc is provided with three lines of crank pin holes located 120 degrees apart. By working the crank pin in the line of holes indicated for each month, the wear is distributed uniformly around the main gear.

After the counterweights are once set to properly balance the pumping load, their relative position need not to be disturbed when the unit is used for servicing.

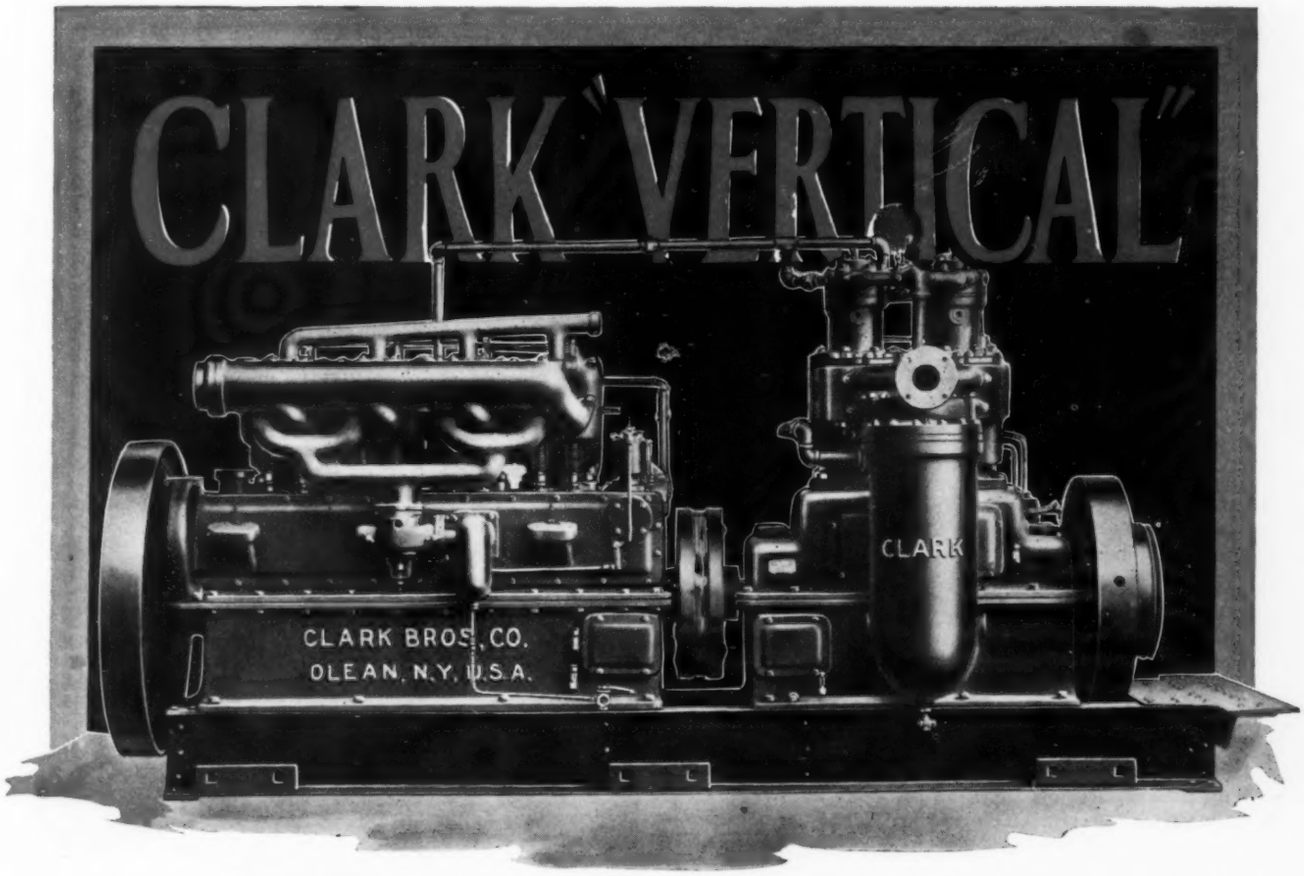
The clearance between the multiple crank disc and the counterweight assembly allows the disc to rotate free of counterweights, eliminating both the counterweight and fly-wheel effects when the unit is used for servicing.

Hex-Top Grease Cups

Hex-Top Grease Cups, recently introduced, should find a wide application in oil field work.

The shape of the cup is six-sided,

LINK-BELT CONVEYOR IDLER AND RETURN ROLLS



FOR TEMPORARY AIR-LIFT PLANTS

or where speed of installation is a factor

For field air-lift plants that are substantial and efficient—yet *capable of being moved* with speed and minimum expense—the CLARK Vertical Semi-Portable Compressor provides the ideal unit. Mounted complete on one base, it can be set on timbers and placed in immediate operation.

PORTABILITY is highly desirable in field air-lift plants. The response of wells to air-lift may be of short duration. A portable plant can promptly be moved elsewhere.

SPEED OF INSTALLATION is another important need, as it is frequently advantageous to put wells on air-lift while they are properly headed.

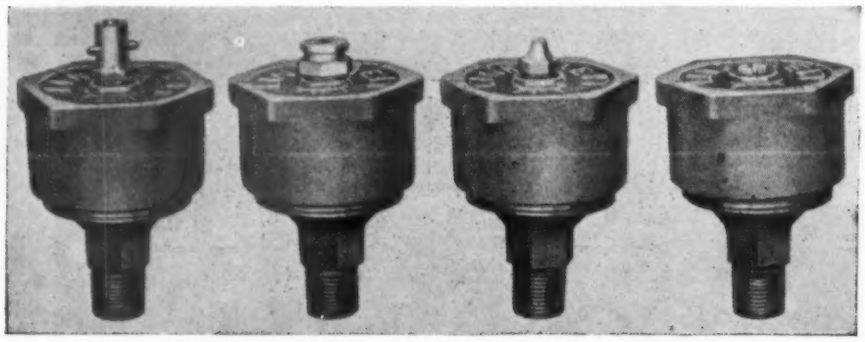
CLARK Portables provide the ideal answer to these needs. These units are also entirely suited for permanent installations, though where permanent plants are planned the CLARK Tandem Compressor merits investigation.

Capacity of CLARK vertical, 330,000 cu. ft. in 24 hours, at 400 lbs., discharge pressure. Gas Engine, 4-cylinder, Vertical, 75 H.P. Compressor: 2 vertical cylinders, each 2-stage.

Our engineers will gladly assist you with operating data and information. Clark Bros. Co., Olean, N. Y. Branch and Warehouse: 125 W. First St., Tulsa. Warehouses at McCamey and Sweetwater, Texas, and Artesia, N. M. California: Smith, Booth Usher Co., 228 S. Central Ave., Los Angeles, and 50 Fremont St., San Francisco.

CLARK

Say you saw it in The OIL WEEKLY



LINK-BELT HEX-TOP GREASE CUPS

giving, it is said, an easy purchase for any type of wrench and a good grip for the hand.

The combination of compression grease cup and Alemite fitting adds to the usefulness of the cup.

An example of this would be in the lubricating system of a long belt conveyor using many grease cups for the idlers; here the easiest, quickest and most economical way to fill all the cups at one time, it is said, is with a grease gun applied to the Alemite fitting, when the cap is turned up to a high point, but not entirely unscrewed or removed.

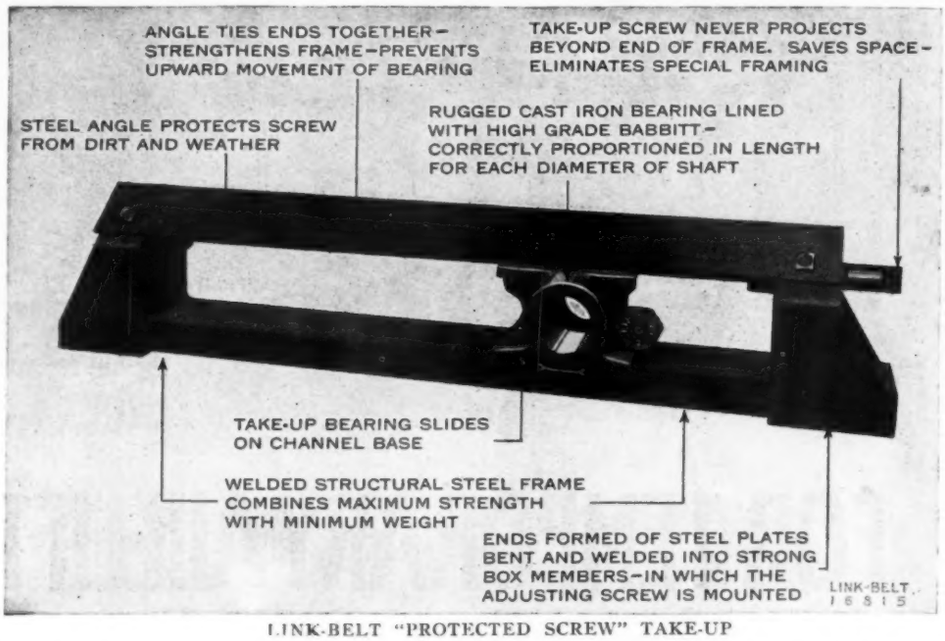
The filling can be done without waste of grease, and without any inconvenience; the cup holds a good reserve for us of the compression feature; and an occasional slight screwing down by hand or wrench is all that is necessary until it is time to have a general refilling of the cups.

The fact, moreover, that the cup may be readily filled in even the most inaccessible places is due to the "Hex-Top" head as well as to its fillings.

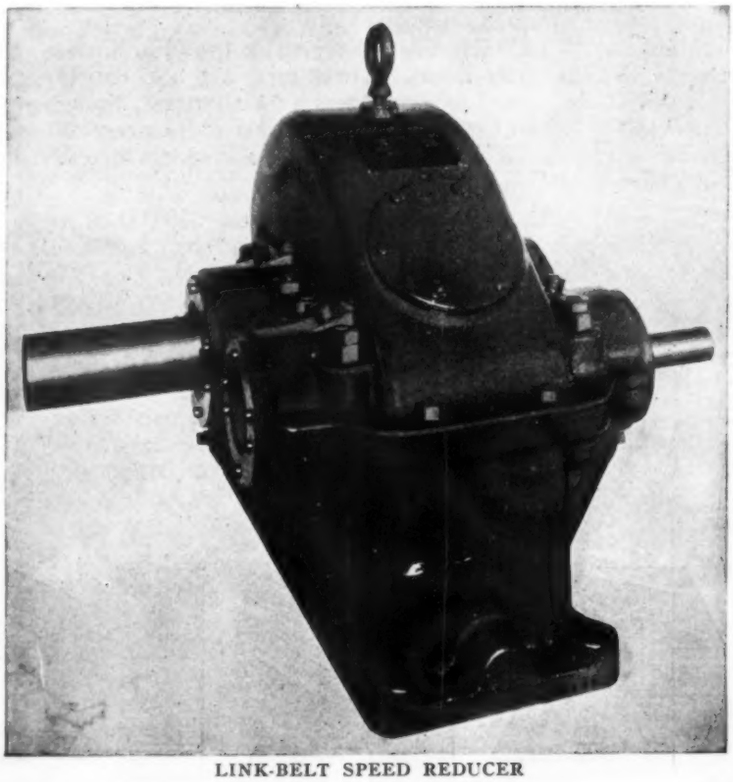
Link-Belt Speed Reducer

A speed reducer which can be applied to all classes of service is also a new Link product.

Standard units have been developed to cover a wide range of ratios and capacities. The single reduction unit designated as type "S" covers ratios up to 10 to 1. Types "D" and "DV" are double reduction units. Type "D" is designed for heavy duty and ratios are from 10 to 1 up to


ANGLE TIES ENDS TOGETHER – STRENGTHENS FRAME – PREVENTS UPWARD MOVEMENT OF BEARING
TAKE-UP SCREW NEVER PROJECTS BEYOND END OF FRAME. SAVES SPACE – ELIMINATES SPECIAL FRAMING
STEEL ANGLE PROTECTS SCREW FROM DIRT AND WEATHER
RUGGED CAST IRON BEARING LINED WITH HIGH GRADE BABBITT – CORRECTLY PROPORTIONED IN LENGTH FOR EACH DIAMETER OF SHAFT
TAKE-UP BEARING SLIDES ON CHANNEL BASE
WELDED STRUCTURAL STEEL FRAME COMBINES MAXIMUM STRENGTH WITH MINIMUM WEIGHT
ENDS FORMED OF STEEL PLATES BENT AND WELDED INTO STRONG BOX MEMBERS – IN WHICH THE ADJUSTING SCREW IS MOUNTED
LINK-BELT
1515

LINK-BELT "PROTECTED SCREW" TAKE-UP



LINK-BELT SPEED REDUCER

80 to 1. Type "DV" is a light duty reducer. Ratios range from 10 to 1 up to 130 to 1.

Link-Belt Sykes Herringbone gears are the backbone of this speed reducer. The teeth run continuously across the face of the gear, giving a good bearing service with the several teeth engaged. The pinions are of heat treated alloy steel, cut integral with the shaft.

Oversize Timken bearings are used. Gears rotate within a large oil reservoir and bearings are splash lubricated. Special oil baffles protect against dust.

Improved Ttake-Up

Frame of this outfit is of welded structural steel with channel base welded to ends formed of steel plates, bent and welded into box members in which the adjusting screw is mounted.

The steel angle bolted on top of the ends protects the screw from dirt or the weather, in addition to tying the ends together.

The protected screw remains fixed in position, and the nut for adjusting the movement of bearing travels on the screw.

The movement-adjusting screw does not project beyond ends of the frame.

The cast iron bearing is lined with babbitt, tapped for grease cup or pressure fitting.

USES ⅓ LESS FUEL!

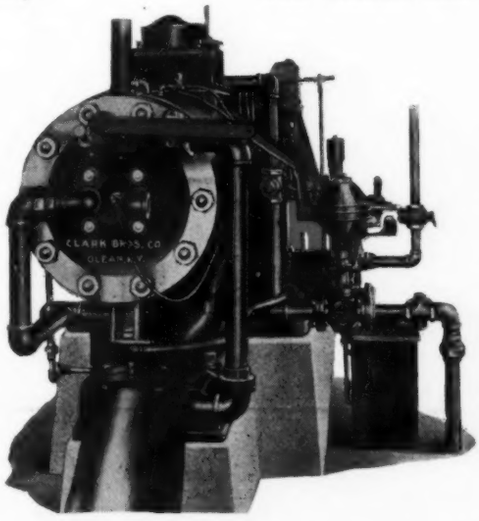
The CLARK FUEL INJECTOR, shown in red, recently introduced an entirely new idea in large compressor operation.

This improved type of fuel feed is provided only on our new CLARK "Super 2" Compressor. (The name "Super 2" indicates our famous CLARK 2-Cycle Compressor, *PLUS the new FUEL INJECTOR.*)

The FUEL INJECTOR displaces the old familiar suction feed, providing in its place *scientifically regulated, positive force-feed of fuel* into the engine cylinder.

Tests conducted by CLARK over an entire year proved that, compared with the best 2-cycle gas engine, the new "Super 2" *uses* 1/3 *less fuel.* This is because the *regulated* feeding of fuel into the cylinder, under approximately 15 pounds pressure, at exactly *the right time,* gives better mixing, higher turbulence, and eliminates loss of gas into the exhaust.

Compared with 4-cycle engines, the "Super 2" *equals* 4-cycle fuel economy. An additional factor here is the smaller combustion chamber, with reduced heat losses.



4-cycle economy, combined with 2-cycle simplicty, are achieving a tremendous success for the CLARK "Super 2." Investigate. Clark Bros. Co., Olean, New York. Branch and Warehouse: 125 W. First St., Tulsa. Warehouses: McCamey and Sweetwater, Texas, and Artesia, N. M. California: Smith, Booth Usher Co., 228 S. Central Ave., Los Angeles, and 50 Fremont St., San Francisco.

CLARK

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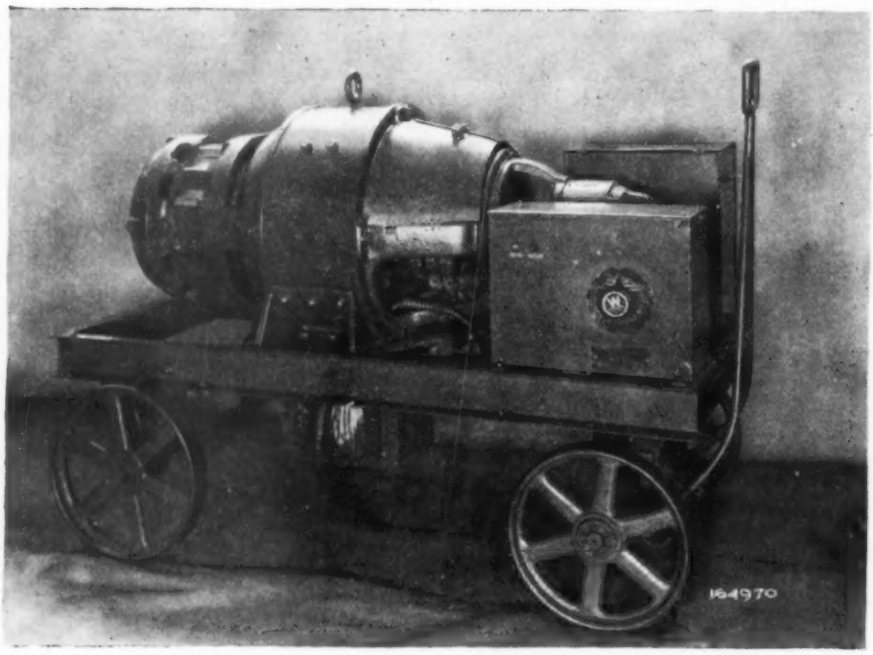


WESTINGHOUSE PORTABLE WELDER

Westinghouse Products

WESTINGHOUSE ELECTRIC AND MANUFACTURING COMPANY

Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pennsylvania, announces a new single operator arc-welder.

The motor of the motor-generator set is controlled by a magnetic linestarter, consisting of three magnetic contactors operated by a simple push-button switch. The welding current is controlled by a single resistor in the direct-current generator field. To cover a wide range of applications, this welder is built in three ratings: 200 ampere, 300 ampere, and 400 ampere. The current range of the 300-ampere outfit is from 75 amperes to 400 amperes, in steps of approximately seven amperes, and the current range of the 400-ampere outfit is from 100 amperes to 500 amperes in the same steps. The special, squirrel-cage motor used to drive each size of machine is wound for 220 and 440 volts. The operation of these welders requires only the two simple movements of pushing a button to start the motor-generator set, and turning the handle of one rheostat to adjust the welding current to the desired value.

These sets are built either as stationary or portable units. These are alike except that in the case of the stationary units, the running gear is omitted and the stabilizing reactor is mounted separately.

Due to the constant current charactertistic of the generator, the arc is stable over a wide range of welding current.

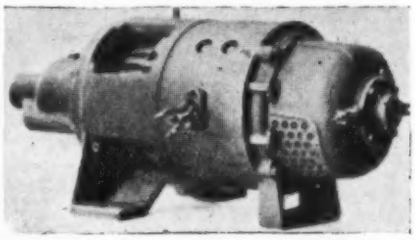
Turbine Generator

A direct connected turbine generator unit having a rating of 3 kw has been recently placed on the market by the South Philadelphia Works of the Westinghouse Electric and Manufacturing Company. This apparatus has been developed to meet the growing demand for a high grade small non-condensing steam turbine generator lighting set for use with oil well rigs, isolated pumping plants and for general out door construction work. The generator coils are specially impregnated and all parts requiring such protection are heavily sherardized to meet the conditions of applications of this nature.

The unit is capable of generating 3 Westinghouse re-entry type single impulse wheel turbine is used and is overhung on the end of the generator shaft.

The turbine cylinder is bolted to a flange on the generator frame. The generator rotor is carried on extra large size ball bearings. The turbine rotor is a solid forging of distinctive design, in that the buckets are milled on the inside periphery of an overhanging flange which is integral with the disc proper. It is pressed on a tapered extension of the generator shaft and secured with a lock nut. The turbine and generator ends are completely isolated thus insuring against the possibility of short circuiting of windings, due to steam or water entering the generator end of the unit.

The steam nozzle and reversing



WESTINGHOUSE TURBINE GENERATOR UNIT

chamber are contained in a single block which is bolted to the inside of the turbine cylinder. The speed of the unit is regulated by a flyball, centrifugal, shaft type governor, which is carried in a heavy case bolted directly to the rotor disc. This governor is equipped with specially hardened steel knife edges and blocks and acts directly on the valve stem. This governor has been employed for many years by the Westinghouse Company on their units of various capacities. An effective sealing gland is furnished to prevent the escape of steam around the rotor shaft where it passes through the cylinder. It is of the labyrinth design, employing piston type metal sealing rings. The generator consists of a rolled steel frame with cast iron brackets, two main poles, one commutating pole, two brush arms and two brushes per arm, and has a lathe wound armature.

The generator is ventilated by a fan mounted on the shaft between the inboard generator bearing and the turbine casing. The air is drawn in through the front covers, then on through the generator and out of a number of openings located in the rear bracket. A suitable guard is furnished to prevent injury to the fan or to the operators of the machine.

The unit runs on two heavy single row ball bearings, each bearing being held securely to the shaft by a lock nut. Grease is used for lubrication and can be added by removing a pipe plug located over each bearing. The manufacturers state no oil should be used in these bearings as it may leak through and deteriorate the windings.

All parts are readily accessible for inspection by simply removing the turbine and the generator end covers. The manufacturers have incorporated in this unit insurance against destruction of the machine and injury to the operators in case of accidental overspeeding, by providing protection in the form of an overhanging flange of the turbine rotor. This flange is subject to expansion when the unit reaches a predetermined speed, this speed being well below the rupturing point of any of the parts. If this speed is exceeded the expanded rotor flange fills the clearance space in the cylinder, thus establishing a rubbing contact. This contact sets up a powerful breaking action which restrains the speed of the unit to within safe limits.

New Oil Field Motor

The company announces a specially designed, two-speed, double horsepower rated induction motor for drilling and pumping oil wells.

It is a variable speed motor of the wound rotor type, designed to run at 575 r.p.m on the low rating and 1160 r.p.m. on the high rating. The motor operates on either 50 or 60 cycles.

The control equipment, consisting of a drum controller, a pole changer, an oil circuit-breaker, and a grid resistor is assembled as a self-contained unit. The controller gives forward and reverse operation with nine points of speed control in each direction. It is equipped with a sheave wheel for operation from the derrick. The pole changer changes the mo-

SAVES OPERATORS *REAL* MONEY

Big Savings in Fuel, Water, Drilling Time!

The primary reason for the success of the CLARK Drilling Engine has been that it saves the operator *money*—often several thousand dollars on one well—*always* thousands of dollars a year.

Burning natural gas, the CLARK uses about 7,000 cu. ft. a day as compared with 60,000 for a boiler. This means a fuel saving of nearly $5,000 a year. Burning gasoline, as opposed to fuel oil for the boiler, the CLARK saves around $3,000 yearly.

Another saving is on water. A third is on drilling time, as in pulling operations the CLARK maintains maximum power at maximum speed indefinitely.

CLARKS often pay for themselves on one well. Ask for literature.

CLARK BROS. COMPANY
Olean, N. Y.
Branch and Mid-Continent Warehouse: 125 W. First St., Tulsa
Warehouses at McCamey and Sweetwater, Texas, and Artesia, N. M.

Smith, Booth Usher Company
228 S. Central Av., Los Angeles 50 Fremont St., San Francisco

CLARK

Say you saw it in The OIL WEEKLY

tor from low speed to high speed, and vice versa, and automatically connects the proper overload coil of the circuit-breaker into the circuit. The circuit-breaker provides overload and low voltage protection to the motor when operating at either high or low speed. Where the safety regulations require an entrance switch to be connected directly with the control equipment a three pole, enclosed knife switch is provided. For emergency use in shutting down the equipment from the derrick, a "stop" push button is mounted on the headache post.

The Westinghouse twin-motor drilling equipment consists of two of the new two-speed pumping motors belted to a common countershaft. The motors have small diameter rotors and the control gives a very large number of speed points, thus it is possible to obtain any desirable pick-up speed to give perfect motion to the tool at all depths of hole. The motors are designed for a pull-out torque of four and one-half times normal full load torque so that they will meet the requirements of sudden overloads.

The controllers are equipped with sheave wheels which are operated by cables from a special operating mechanism mounted on the headache post. These sheave wheels are so interlocked that independent operation cannot be obtained until both controllers have been moved to at least the first point. The two pole changers are operated with one hand wheel.

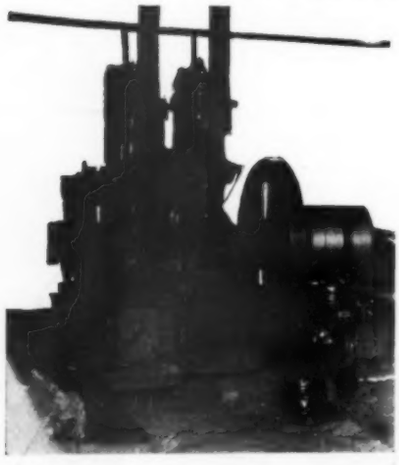
In the operation of the equipment, both motors are operated on their low speed connections for drilling, and on their high speed connections for hoisting the drilling tools and running the bailer. By operating the main motor on any one of the nine points of the controller, and the points of control, any desired speed can auxiliary motor on any one of its nine

More information can be had from the company on request.
be obtained.

Diesel Type Engine for Field Work

TIPS ENGINE WORKS

A Diesel Type Oil engine put on the market for use in oil fields a short time ago by the Tips Engine works, Austin, Texas, is attracting considerable attention.



TIPS DIESEL TYPE ENGINE

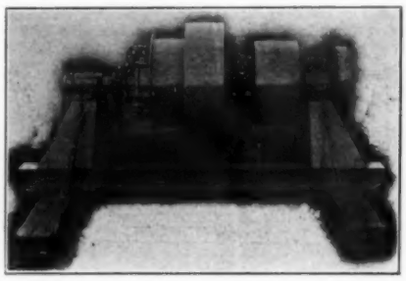
Features that make the engine especially adaptable for use in the field, according to the manufacturers, include excellent drilling motion accomplished by means of a special design of governing mechanism, quick, power demands, and fuel economy.

The engine is used in combination with a reverse countershaft manufactured by the O. C. S. Manufacturing Company, Coffeyville, Kansas.

The countershaft is of sturdy construction, built for heavy duty. The main driven and reverse driven pulleys are mounted on Timken roller bearings.

A reversing clutch can also be furnished as part of the engine equipment.

More information can be secured from the company, at Austin, on request.



O. C. S. COUNTERSHAFT

New Drilling Tools

AMERICAN IRON & MACHINE WORKS

American Iron and Machine Works, Inc., Oklahoma City, Oklahoma, have perfected and announced two new tools applicable to the oil industry.

AMERICAN IRON AND MACHINE WORKS ROCK BIT BREAK-OUT BLOCK

Rock Bit Break-Out Block

The break-out block has a solid bottom to prevent the loss of tools in the hole. Small drain holes in the bottom let slush and water back through. The block holds the bit steady so that joints can be broken quickly. The block is made in various sizes for rotary tables for the 11¼-inch rock bits. Bushings are also furnished where smaller size bits are used.

Rock Bit Cone Fishing Socket

Design of the fishing socket permits spudding through bridges, rotating by boulders and through tight places. The socket is made in various sizes to fit holes and tool joint boxes.

Further details on both products can be had through communication with the company.

AMERICAN ROCK BIT CONE FISHING SOCKET

Buckeye New Models

THE BUCKEYE TRACTION DITCHER COMPANY

The Buckeye Traction Ditcher Company, Findlay, Ohio, announces a new Buckeye Ditcher, Model 15, developed especially to meet the need for a lightweight ditcher for small trenches. The outfit is especially recommended for oil field service.

The main frame of the outfit is built of structural I-beams, 12 feet, 6 inches long and 29½ inches wide from center to center, with three eight-inch I-beam cross members. Joints have standard, double-angle connections, hot riveted.

Steering is by means of a worm drive.

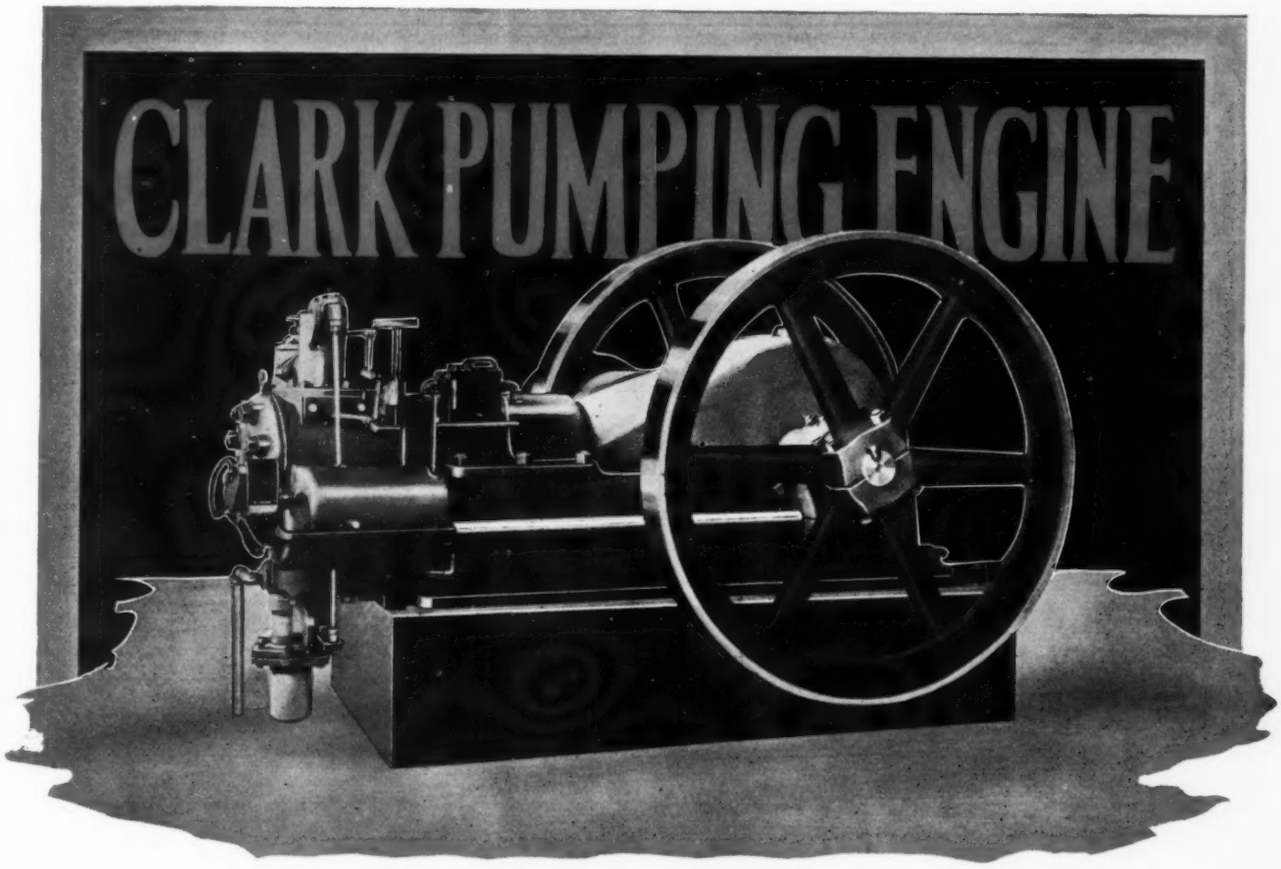
Crawler type traction wheels are used. The treads of electric cast steel have smooth contact surfaces, but they can be fitted with lugs if desired. The wheels oscillate on the axle and are driven through a differential.

The outfit readily travels and operates over soft and sticky mud or uneven ground.

The cutting wheel is built for hard usage. Buckets are equipped with either rooters or center cutters, as soil conditions require. Crumber or leveling shoe at the rear of the cutting wheel provides a clean trench and a graded bottom. The cutting wheel is driven from both sides through high-speed steel roller chains and electric cast steel sprockets, with a differential to equalize the pull.

The conveyor belt is kept centered by a patented construction.

The unit is powered with a four-



OFFER 6 ADVANTAGES

IMPROVED CLUTCH—With double bearing, removing all belt strains from crank shaft.

ENCLOSED CRANKCASE—Means dust kept out of bearings and clean lubricating oil.

AUTOMATIC LUBRICATION—Main bearings chain-oiled. Sight-feed at Cylinder, Wrist Pin, Crank Pin. Valve gears, cams, etc., run in oil baths.

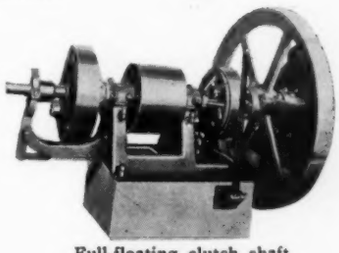
BORED MAIN BEARINGS—Fitted with replaceable bronze backed babbitt liners.

4-CYCLE—Runs on less gas—starts easily.

GOVERNOR—Sensitive, variable speed.

11 x 20 — 275 R.P.M. — 40 H.P.

A Better Pumping Engine that Merits Investigation.



Full-floating clutch shaft eliminates side-pull on crankshaft. Every mechanical detail perfected. Reverse speed 2 to 1.

CLARK BROS. COMPANY

Olean, N. Y., or 125 W. First St., Tulsa

Warehouses at McCamey and Sweetwater, Texas, and Artesia, N. M.

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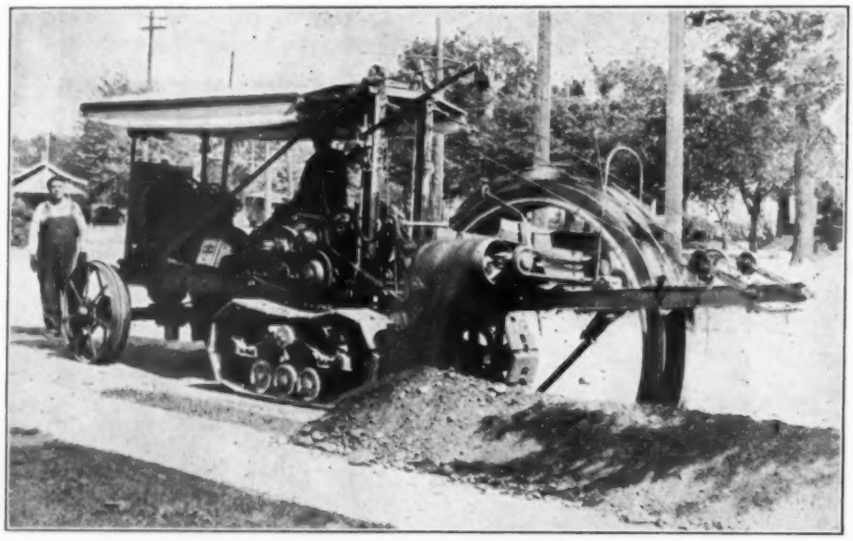
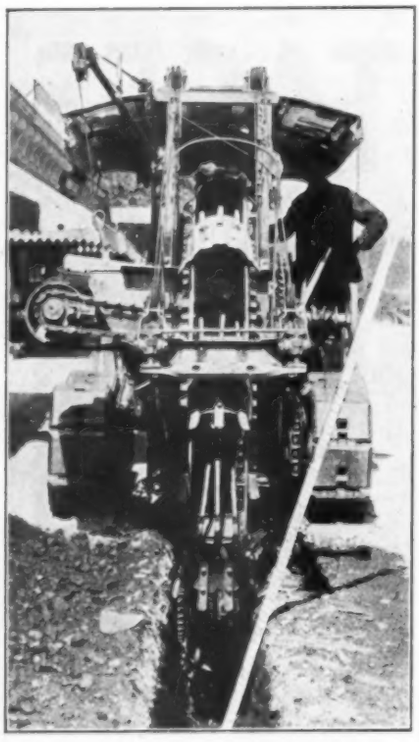


MODEL 15 BUCKEYE DITCHER IN ACTION

cylinder, heavy tractor type gasoline motor, which develops 35 horsepower at 1000 r.p.m. The crankshaft is of chrome nickel steel, heat-treated and ground.

The outfit has three different digging speeds per minute, two, three and one-half and five feet. Road speed is one-and one-half miles per hour.



MODEL 15 BUCKEYE DITCHER, REAR VIEW

Backfiller

Backfillers are rapidly coming into use as cranes, especially where light duty hoisting apparatus is required. The new Buckeye backfiller, is a good example of this commonsense trend in equipment.

While it is primarily a backfiller, it

BUCKEYE BACKFILLER

can also be used to pull piling, handle pipe, batch boxes, forms, stone and steel. Equipped with a clamshell, it will handle all loose materials and also clean up after excavation jobs. Its full circle swing, and adjustable-length boom increases its adaptability to this wide variety of purposes. Its full length Alligator traction takes it anywhere.

Another feature of this equipment is its quick and convenient control. All controls are located in easy reach at the operator's platform. The driver faces the work at all times.

The machine travels, and is easily controlled, with the boom rotated in any direction.

It is also claimed that a high degree of ruggedness has been built into the machine, assuring unusual durability.

New Ellis Products

ELLIS MANUFACTURING COMPANY

The Ellis Manufacturing Company, Kansas City, Kansas, is marketing two new items applicable to the oil industry.

Ellis Oil and Gas Separators

In the Ellis separator, due to the special arrangement of baffles, the separation starts as soon as production enters the separator. It is claimed that with this separator no loss of gravity occurs.

Ellis Volume Barrel

The Ellis volume barrel is a working barrel of greater diameter than the tubing and provides a means whereby the volume of a three or four-inch working barrel may be delivered through tubing of a much smaller diameter. The barrel is connected with the tubing by means of a swedge nipple.

The barrel is equipped with a standing valve, traveling valve and a 22-inch cast iron plunger. The plunger is equipped with eight piston rings. A clutch bowl is attached to the upper crown.

In installing the barrel, the bowl is attached to the tubing and the barrel let down into the well with the tubing. When the barrel is placed in position, a sucker rod with clutch attached is let down through the tubing into the clutch bowl. When the clutch encounters the clutch bowl, the rods are given a half-turn to the right and the clutch becomes secure. The pump may then be operated in the usual manner.

The large type of barrel has a capacity of approximately 50 barrels of fluid per hour and the smaller type approximately 35 barrels per hour.

Safety Pop Valve

THE INFERNO COMPANY

The Inferno Company, P. O. Box 1080, Shreveport, Louisiana, announces a new malleable iron body, brass mounted, safety pop valve.

SAFETY POP VALVE

The valve has renewable valve and seat which give it indefinite life.

New design in valve construction reduces the blow-down to three pounds.

The valve is recommended for steam pressures up to 300 pounds.

More information will be supplied by the company, on request.

Serving a World Industry

with

HUGHES TOOLS

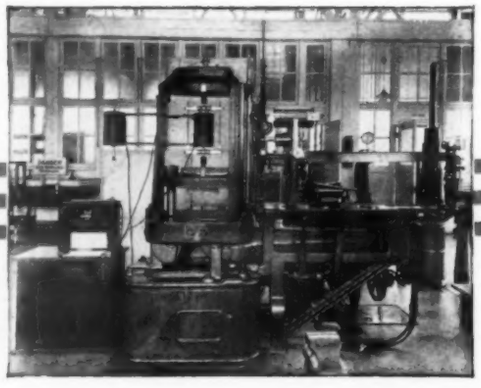
THE GROWTH AND DEVELOPMENT of the Hughes Tool Company reflects the service this company has been privileged to perform to this great industry during the past seventeen years. This service was only possible through untiring effort and constant engineering research work. The results of this work bore fruit in the performance and successful operation of the products given to the oil industry by the Hughes Tool Company.

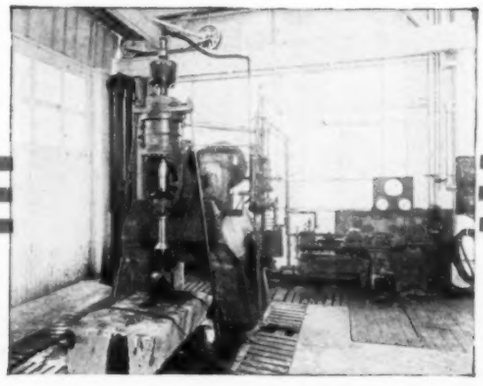
The Hughes Tool Company feels that the establishment of a completely equipped engineering and research laboratory has made possible the raising of the standards of all Hughes products. It is in this laboratory that the close technical supervision of the various plant processes is maintained and in many cases the specifications governing the quality of finished products made more rigid.

This laboratory functions not only from the standpoint of control, but has placed the Hughes Tool Company in a position to carry on the investigation of metallurgical and chemical problems for outside concerns. In the mechanical division of the Hughes laboratory, physical testing machines are used to determine the many physical characteristics of metals such as tensile properties, resistance to fatigue failure, resistance to abrasion, strength against shock or impact stresses, hardness, etc.

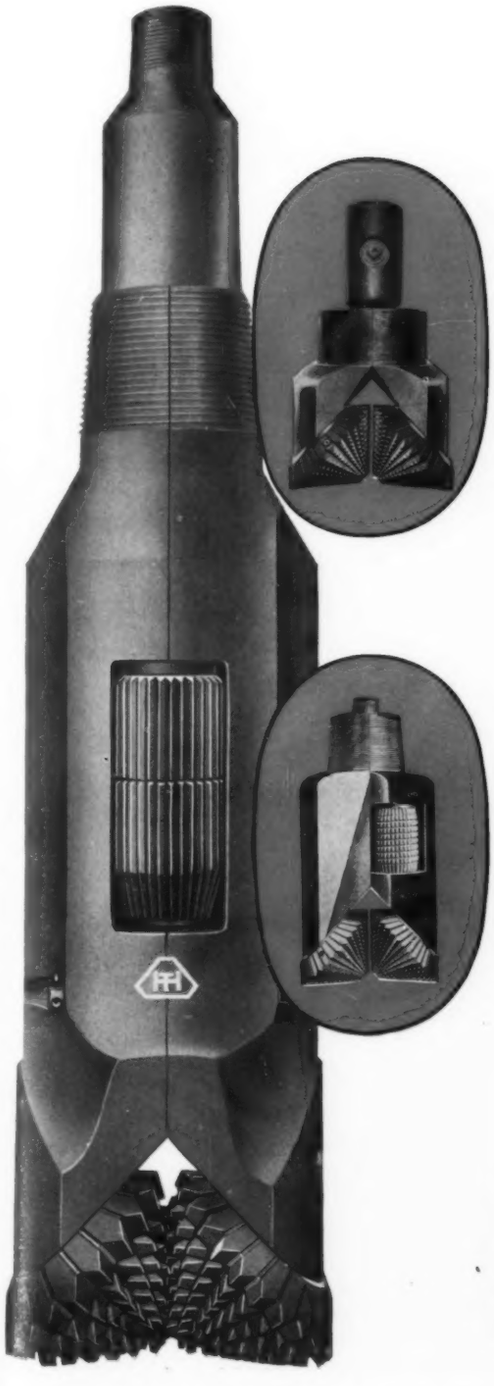
Detailed micrographic and macrographic analyses are made in the metallographic division of the laboratory and chemical and physico-chemical analyses obtained in the chemical department.

The Hughes Tool Company presents here some of the latest improvements in oil field tools as developed in the Hughes laboratory and seasoned by careful field tests.





The Development of Hughes Rock Bits



Through consistent speed and safety of performance the Hughes Rock Bit has won world wide recognition in the petroleum industry.

The Hughes Rock Bit of today, when compared with the bit first offered to the oil industry nearly two decades ago, gives a good example of the development and growth of the Rotary Process of Drilling.

The same basic principles that made the first Hughes Rock Bit a success are combined in the Hughes Simplex Rock Bit of today. These principles, together with improvements of recent years have lowered drilling costs and spread the use of the Rotary.

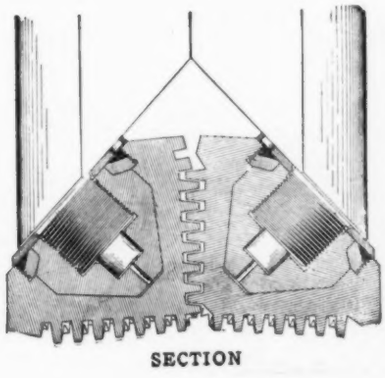
Constant improvement resulting from broad field experience acting in co-operation with laboratory research has always characterized Hughes Products. The latest improvement in the Hughes Simplex Rock Bit is the Self-Cleaning type of cone cutter.

In the Hughes Self-Cleaning Cone, the Hughes Tool Company has made available to the oil industry a cutter that has more than doubled previous records of speed and footage in such formation as chalk, anhydrite, gypsum, limestone and shale.

With the Hughes Self-Cleaning Cone you can make "sticky-breaks" without coming out of the hole to go in with a fish-tail bit.

Hughes Self-Cleaning Cones

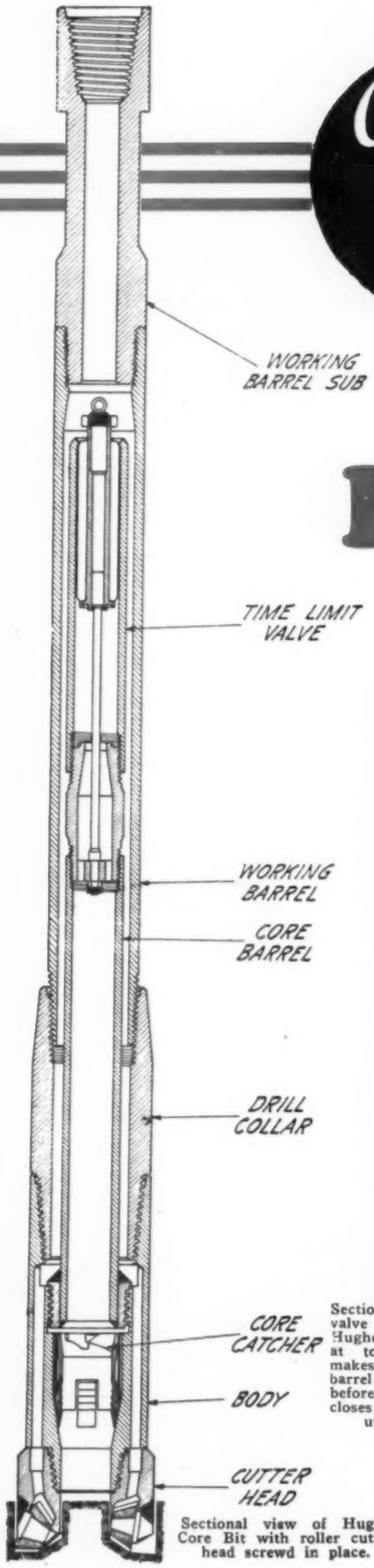
SIDE ELEVATION



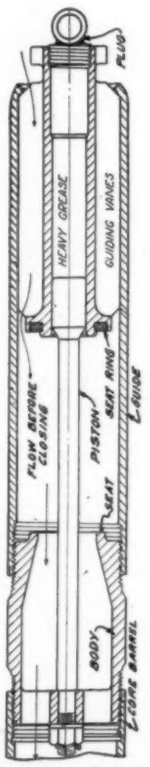
SECTION

Another HUGHES Achievement

Hughes Roller



Sectional view of Hughes Core Bit with roller cutter head screwd in place.



Sectional view of time limit valve used in core barrel on Hughes Core Bits. Located at top of core barrel, it makes possible flushing of barrel and bottom of hole before taking core. Valve closes after 15 to 30 minutes pumping time.

In the Hughes Core Bit, the Hughes Tool Company is offering the Oil Industry a proven tool, developed through actual field tests as well as stringent laboratory tests over a period of many months.

The success of these tools has been more than satisfactory and marks another mile stone in the service the Hughes Tool Company has been privileged to perform for the Industry.

When using the Hughes Hard Formation Core Bit you can take cores in hard abrasive

1. Can handle cores in both extremely hard and soft formations.
2. Hard and soft formation cutter heads interchangeable on core bit body. (Change can be made on derrick floor in a few moments time).
3. Sure recovery of core.
4. Recovered core is free from contamination.
5. Can be handled with same elevator and slips used on drill pipe because of Over-shot Sub.
6. Has successfully taken cores in California, Oklahoma, Louisiana, Texas and Arkansas.

Core Bits

formations which formerly could not be drilled satisfactorily except with diamond tools. With this bit such formations as granite, basalt, sandy lime, limestone, anhydrite, chalk, gypsum, and hard shale can be cored successfully.

In addition to the Roller Core Bit Cutter Head, a Soft Formation Cutter Head is available. Both types are interchangeable on the Core Bit Body.

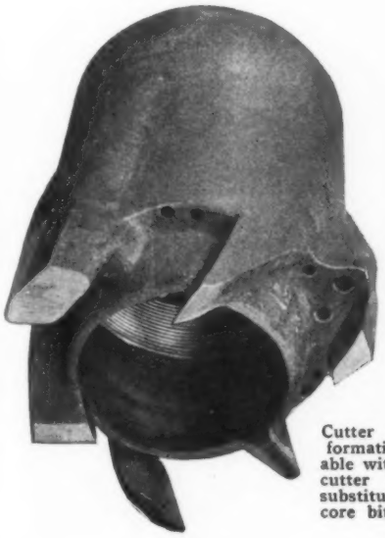
Complete information and prices upon request.

Oblique bottom view of Hughes Roller Core Bit Cutter Head

View showing how Hughes Roller Cutter Head is attached to the core bit body. Note Acme Thread pin and box.

Assembly of Hughes Roller Core Bit for hard formations.

The Core Catcher for Hughes Core Bits.



Cutter Head for soft formations—interchangeable with hard formation cutter head. (Can be substituted on regular core bit body when desired).

Hughes

Cast Chrome Nickel Steel

Drilling Valves and Fittings

Hughes Drilling Valves and Fittings are products of refinement entirely in keeping with the high standard of quality of other Hughes Tools. In material, labor, inspection and tests, nothing is left undone to give to the industry valves and fittings capable of maximum performance.

The use of special heat treated steel for every part of a Hughes Drilling Valve insures high ductility and strength and allows a light weight design for high pressures. Basic design including cylindrical body and hemispherical bonnet reduces distortion to a minimum and insures a tight shut-off.

Suspension eyes amply large to pass a cat line are placed at the center of gravity for accurately stabbing the casing. Feet on the bottom of the body support the valve upright on the warehouse floor.

This section has been cold-twisted several times and the flange sections bent together

Other Hughes Features are:

—quick operating gland bolts.
—self-sealing packing.
—heat treated alloy steel hand wheels.
—machined guides—accurate closing.
—lapped seats—flanges machined all over.
—tapered run with shoulder to protect end of casing against hanging up of tools.
—valve stem finish ground after machining to insure true alignment and lower friction on packing.

Hughes Tool Joints

—Supreme in Performance

Sustained adherence to high standards of quality has created for Hughes Tool Joints a leadership that is recognized throughout the oil fields of the world.

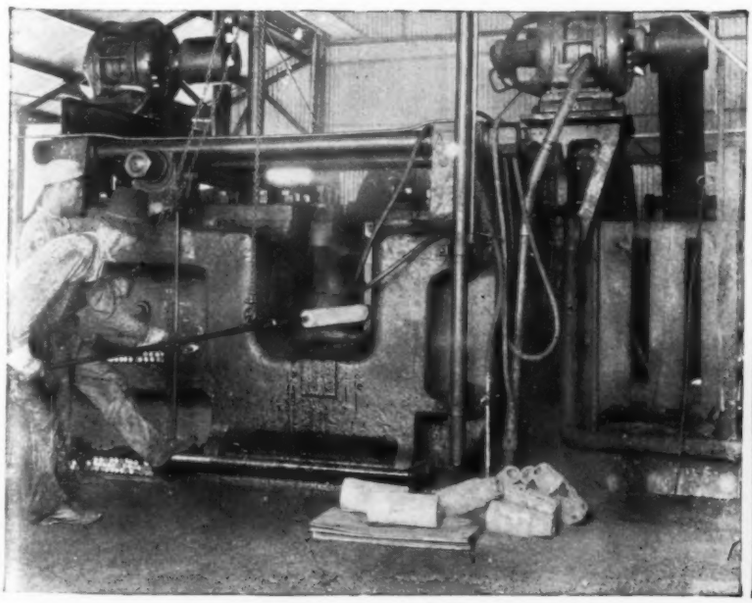
Hughes Tool Joints are made from high grade alloy steel that has been triple forged during processing.

Hughes Tool Joints are guaranteed to be interchangeable.

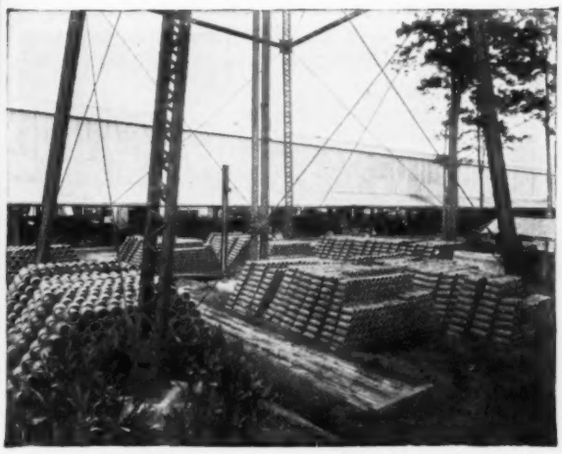
Hughes Tool Joints are given a careful heat treatment in furnaces controlled by recording pyrometers. This heat treatment brings out the latent properties of the alloy steel and insures great strength and toughness with maximum resistance to abrasion, fatigue and galling.

When you buy Hughes Tool Joints you buy

Superior Performance



Making Hughes Tool Joint Forgings



Stock of Hughes Tool Joint Forgings

2030 men—more than seven acres floor space back of Hughes service.

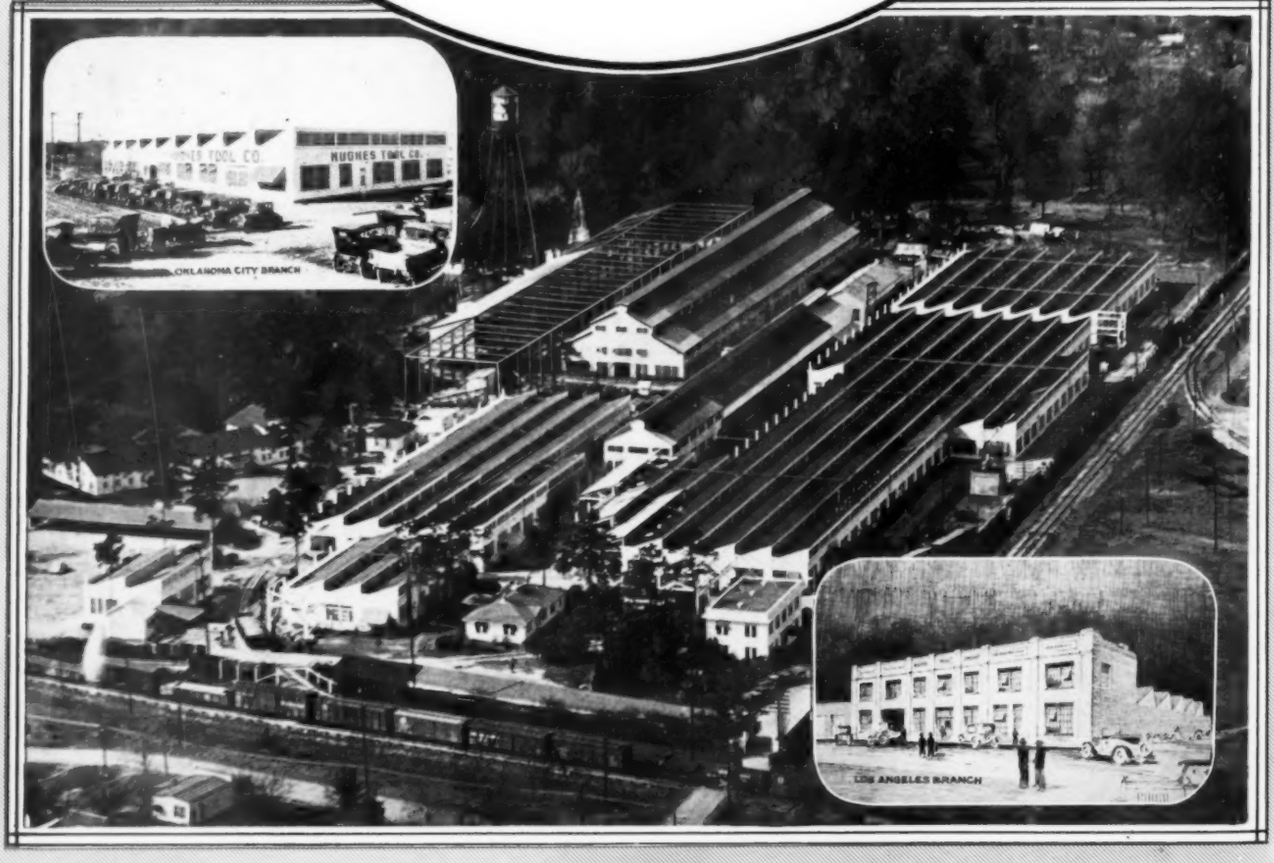
Divisions	HOUSTON PLANT Number Men Employed	Sq. Ft. Floor Space
Rock Bit Dept.	641	28,800
Tool Joint Dept.	178	21,600
Drilling & Refinery Valve Dept.	126	66,400
Foundry	144	40,400
Forge Shop	64	12,600
Heat Treating Dept.	77	15,360
	1,230	185,160
Other Departments	639	106,120
Total	1,869	291,280
Oklahoma City Plant	54	10,000
Los Angeles Plant	107	20,000
Grand Total	2,030	321,280

Over 7 acres of floor space.

HUGHES TOOL COMPANY

Main Office and Plant: HOUSTON, TEXAS

Service Plants: Los Angeles, Calif., Oklahoma City, Okla.
Export Office: New York City, N. Y.



PHILADELPHIA GEAR UNIT

Oil Pumping Gear Unit

PHILADELPHIA GEAR WORKS

The Philadelphia Gear Works, Philadelphia, Pennsylvania, is recommending its new oil pump gear unit for use in pumping.

The unit is designed to give slow pumping speed, high crank speed and high sprocket speed.

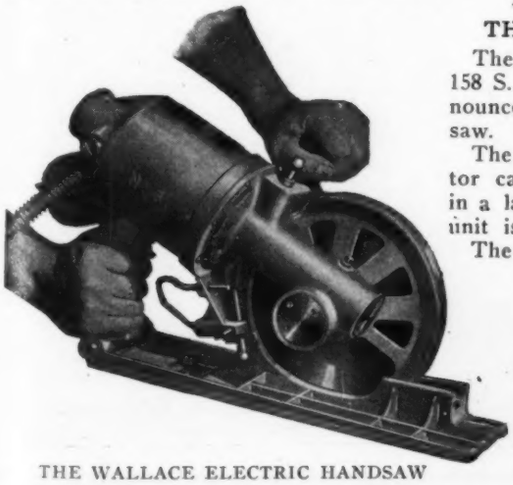
These speeds are accomplished by a double set of pinions on the high speed shaft and a double set of gears on the intermediate shaft. The change-over in speed is done by a handwheel conveniently located on the outside of the casing. Indicating arrows on the handwheel show which of the two speeds is in use. Gear wheels are balanced one against the other.

The standard ratios provided in the unit are: 57:1 for pumping, and 22¾:1 for cleaning out. Thus with a 1200 r.p.m. motor, a pumping speed of 20 strokes per minute is secured and 50 r.p.m. on the crank shaft for the drilling or cleaning-out operation.

With the two-speed gear, the ratio in speeds between pumping operation and the drilling or cleaning out operations may be made any value which is found to be most serviceable.

Changing gears is easily accomplished. The cost iron cover over the gears is removed and the high speed and intermediate shafts and gears removed, and the new set set in their places.

More complete information will be provided by the company, or by the Petroleum Electric Company, 217 East Archer Street, Tulsa.



THE WALLACE ELECTRIC HANDSAW

New Electric Saw

THE J. D. WALLACE & CO.

The J. D. Wallace & Company, 134-158 S. California Avenue, Chicago, announces a new portable electric handsaw.

The saw is so designed that the motor cannot be overloaded by putting in a larger saw blade than the power unit is intended to handle.

The guard on this saw makes it fool-proof. The guard is locked in a position which covers the blade at all points. When the operator wishes to cut, he releases the safety guard by means of a trigger conveniently placed near the grip. When the cut is finished and the saw is lifted from the work, the safety guard or shoe automatically drops and locks in position, covering the blade.

One handle of the saw is of the type found on an ordinary hand saw, the other the same as that used in guiding a hand plane.

A splitter follows the saw blade, drops into the cut, and helps to guide the machine. An indicator in front makes it possible to follow a line, and the shoe is machined on one side to follow a guide rail.

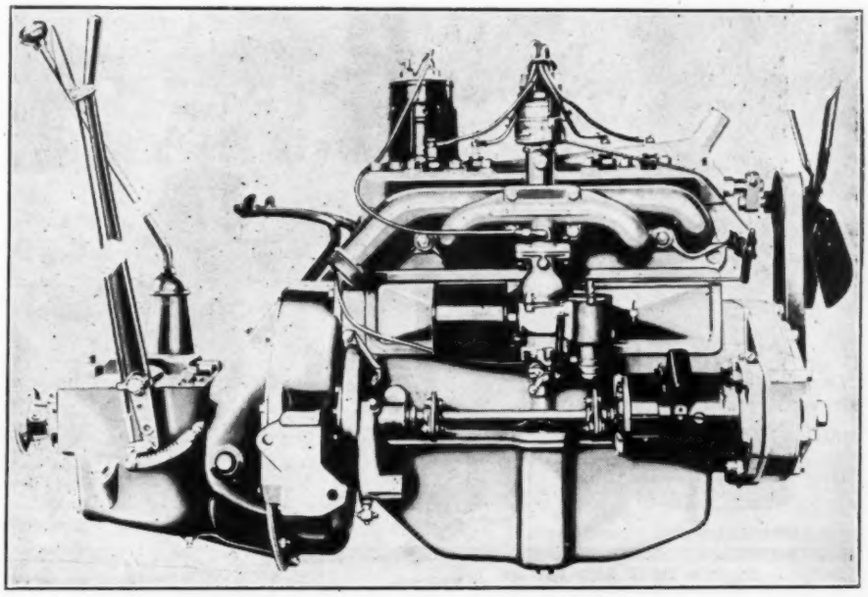
Heavy Duty Truck Engine

GRAHAM BROTHERS

Graham Brothers, Detroit, announce a new engine for the Graham oil field truck.

The new engine is fitted with a sturdy, heavy-duty transmission and a large single plate clutch, both designed for truck service.

The crankshaft is of chrome-vanadium steel with five main bearings.



GRAHAM HEAVY DUTY TRUCK ENGINE

A two-unit starter-generator system is included on the engine.

The distributor is mounted on top of the engine.

Location of the water pump is at the rear of the engine. From the pump the water goes directly to the rear end of the cylinder block and then back to the radiator.

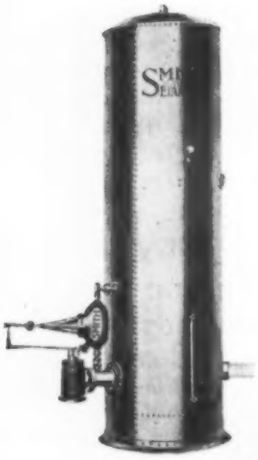
The long hand brake lever is fitted with a double ratchet and an improved release.

A new design is embodied in the intake exhaust manifolds and the combustion chamber has been improved by a sloped head.

More specific details will be provided by the company on request.

"If it's worth drilling for it's worth saving"

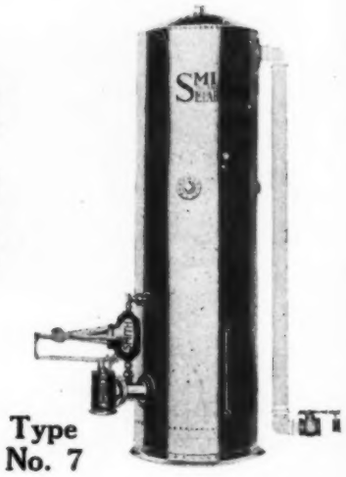
There's a Type of SMITH SEPARATOR for every service—a size for every production need



Type No. 4

Type No. 5

Type No. 6



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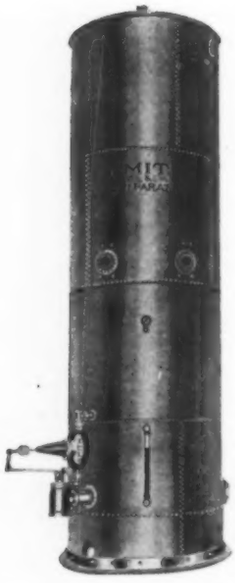
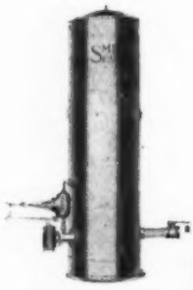


Type No. 9

Type No. 3



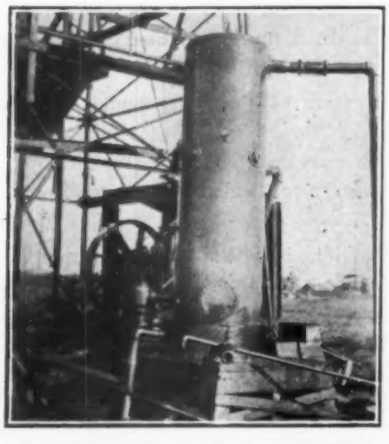
Type No. 1

Type No. 2

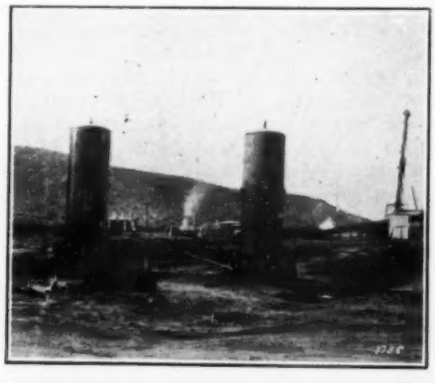
Type No. 10

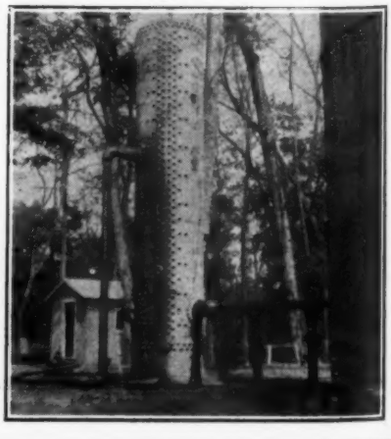
Below is shown a Smith Separator No. 7 on Prairie Oil and Gas—Stedham No. 8, in the Earlsboro Field.

Showing Smith Separator No. 6 on Magnolia Petroleum Company—Robertshaw No. 21



Showing Smith Separators at Yates, Texas. This well came in at three million feet of gas, making 800 bbls. of oil per hour.





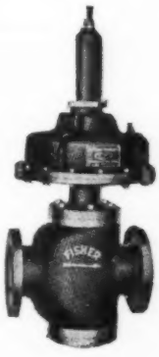
Say you saw it in The OIL WEEKLY

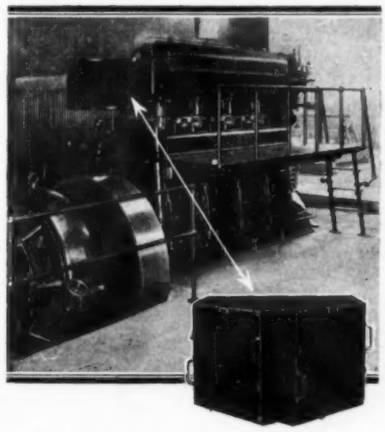
"If it's worth drilling for it's worth saving"

EACH ONE A LEADER

Fisher Regulators

Are leaders in their line —for quality of material and workmanship — for efficient automatic regulating of gas, oil or steam. There is a type for every requirement—Liquid Level Controllers — Vacuum Regulators — Gas Pressure Regulators or Reducing Valves— Steam and Gasoline Traps.

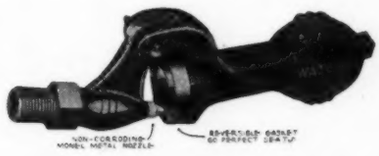




Reed Air Filters

A Reed Air Filter installed on the intake of your engine or compressor will increase its life and working efficiency. It removes 97% of all dust, dirt and grit from the air.

The Waters Gauge



Has 60 seats on its reversible gasket —(double the number of others) and a monel metal nozzel which prevents corrosion.

The Ever-Ready Protector

Is protection against tubing accidents before accident happens. It is not

necessary for accident to happen to make it function. It is the only adjustable protector on the market.

The Victaulic Coupling

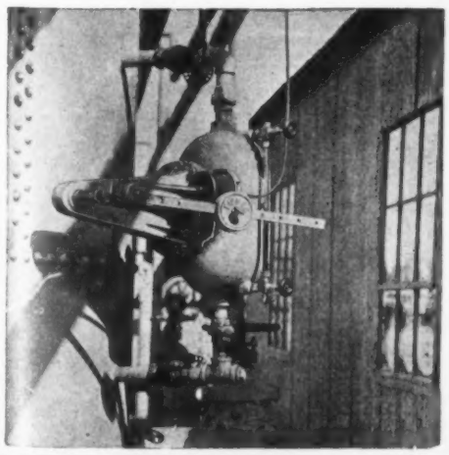
Takes the place of screwed, welded, flanged and bell and spigot joints. It is leakproof and can be installed faster than any other type of coupling.

Showing the Fisher Liquid Level Remote Control, Type 240, installed at the Carter Oil Company Plant, Cromwell, Okla.

SMITH SEPARATOR COMPANY

Victaulic Couplings are simple and easy to install.

Tulsa Okla.



NEW YORK OFFICE:
Export Representative:
Oil Field Equipment Co.,
30 Church St.

Cable Address:
"Oilfields," New York

California Office:
2039 East 38th St.,
Los Angeles, Calif.

LOUISIANA OFFICE:
405 Forest Ave.,
Shreveport, La.

LONDON OFFICE:
Perkins Macintosh Petroleum Tool and Boring Co., Ltd.
25 Bishopsgate

Cable Address:
"Oileborers", London

TEXAS OFFICES:
924 Post Dispatch Bldg.,
Houston, Texas

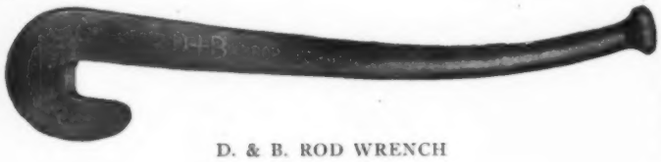
1402 Fort Worth Nat'l Bank Bldg.,
Fort Worth, Texas

Write for catalog

D. & B. Field Specialties

D. & B. PUMP & SUPPLY COMPANY

D. & B. Pump and Supply Company, Inc., Box 301, Station A, Los Angeles, announces several items of new equipment, all of them especially adapted to oil production.



D. & B. ROD WRENCH

Reversible Rod Wrench

The D. & B. rod wrench is now designed so as to be reversible in use, either left or right hand.

FEN-BUCK WRIST-PIN ATTACHMENT

Fen-Buck Wrist-Pin Attachment

This piece of equipment has been designed to hold the wrist pin bearing in the pitman. Fen-Buck holders are made up in two types: one with a cast bearing, top and bottom, and one with a wooden top bearing resting directly on the wrist pin. The cast type embodies an oil reservoir which holds sufficient oil for 36 hours' lubrication. Naturally the wooden type is the most inexpensive, but the cast holder is recommended because of its longer wearing qualities. Both upper and lower bearing blocks are babbitted, and can always be renewed if necessary.

Simplex Sucker Rod Elevator

The non-tipping body and the heat treated wear plate are features of the improved Simplex elevator. The non-tipping feature is made possible by changes in the trunion design. Trunions are in an elevated position in relation to the plate support sockets for the sucker rods. The wear plate is of forged steel, heat treated and hardened at points where wear and strain occur. The plate is seated in a tightly fitting recess in the elevator body and securely riveted.

Simplex Beam Hanger

The Simplex beam hanger is designed to maintain straight line polish rod travel while pumping. The hanger is set over the end of the beam with the front portion extending out approximately nine inches. The rear portion of the top frame is held down by a one and one-fourth-inch bolt running through the beam. As soon as the hanger has been adjusted on the beam so as to center the lifting line, the well is ready to operate. Joints in the hanger are of the roller bearing type, fully enclosed and lubricated by the Alemite Zerk high pressure system. The polish rod grip support is of the same open type and the polish rod can readily be detached by opening the front bar. The hanger automatically swings to an out-of-the-way position when the walking beam is elevated for pulling rods.

SIMPLEX BEAM HANGER

SIMPLEX ELEVATOR

Simplex Junior Jack

Designed for use on isolated wells, the Simplex Junior jack, has portability as one of its principal features.

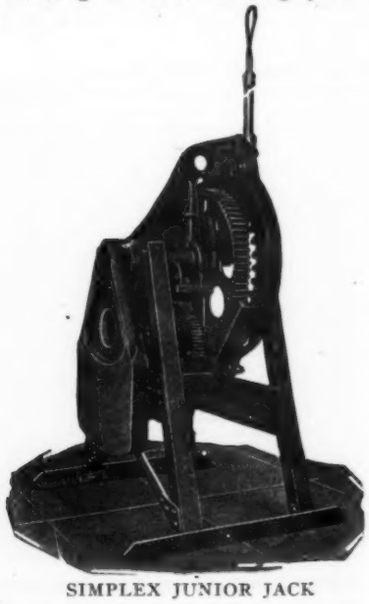
Installation is accomplished by skidding the jack into position over the hole and bolting it in place. The method of attaching the polish rod fork involves a safety feature that provides protection if the pump sands up and the rods fail to fall properly.

Change of speed is accomplished by the simple operation of changing the silent chain motor sprocket.

The rotating counter-weight may be increased by the addition of 200 pound units.

Supporting frame of the jack is of structural steel. Joints, bracing and gusset plates are either hot riveted or secured by fitted bolts in reamed holes. The base members of the structural frame bear on the derrick floor. These members have drilled holes for bolting the jack into position over the hole.

Shafting or other wearing parts are



SIMPLEX JUNIOR JACK

Fordson Equipment **"WHITE"** *Fordson Equipment*

The "WHITE" Tractor Hoist

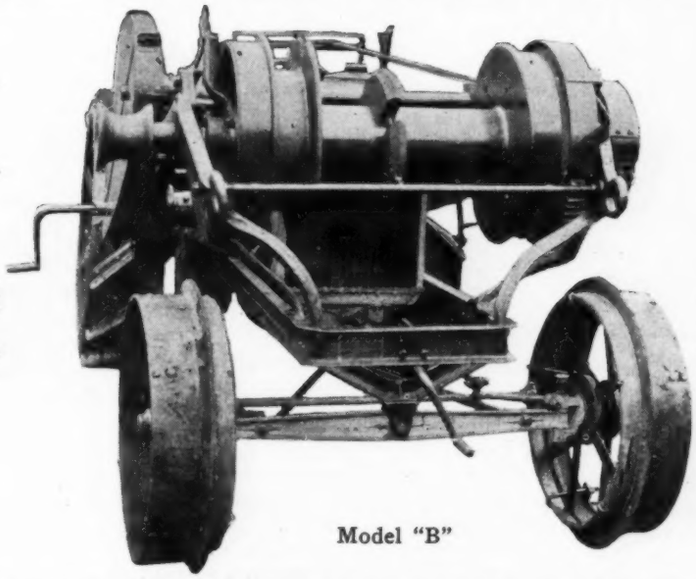
The "CHIEF" of all Hoists for the Oil industry

The "SEMINOLE" Model "D" Crawler Hoist

The "WHITE" Pipe Handling Boom

WHEELS—POWER TAKE-OFFS—POWER UNITS

MODEL "A" CHIEF
2 Speeds Forward
2 Speeds Reverse



Model "B"

MODEL "B" CHIEF
4 Speeds Forward
4 Speeds Reverse

OKLAHOMA ENGINEERING & FOUNDRY CO., MUSKOGEE, OKLAHOMA

HEAD OFFICE:
PACIFIC NATIONAL BANK

NINE BANKING OFFICES
IN LOS ANGELES

Combined Resources Pacific National Bank and affiliated institutions over
$17,000,000.00

A STREAM cannot rise higher than its source, a business higher than its ideals . . . The position of eminence achieved by the Petroleum Industry is a monumental tribute to those who have formulated its policies and guided its destinies . . . PACIFIC NATIONAL is proud of the part it has played in giving banking service to those connected with the oil business and its allied industries.

PACIFIC NATIONAL BANK

OF LOS ANGELES

THE OIL MAN'S BANK IN CALIFORNIA

SIMPLEX INSERT PUMP

made of nickel steel. Gears are of cut steel, operating on anti-friction bearings, using pressure lubrication. The motor and driving gears are encased in a metal hood and oil pan, permitting the gears and silent chain to operate in a bath of oil.

Simplex Insert Pump

One of the features of the pump is the method used to hold the liner barrel in place at the bottom of the hole. The barrel is run in on the rods, the lock sleeve being forced into the lower pump shoe by the pressure of the rod string. At the same time the valve rod bushing and seat engage the upper collar and forms a top seal. As a result, the liner barrel is sealed at the top and locked at the bottom with a friction hold.

Weight of the entire fluid column spreads the cups on the plunger sleeve so that they exert a tremendous pressure against the liner barrel.

The design of all parts in this pump is standardized so that replacements can be had by mentioning the number of the part. The pump can be furnished with any fitting hook-up desired.

The pump seats in the top collar and acts as a packer. Fittings are completely enclosed and protected when the pump is run in. Pump operates at any pumping depth and with a maximum stroke of six and one-half feet.

Further information will be furnished by the company, on request.

Save it. This issue should not be laid aside after one reading. It will be handy all next year when you need some equipment for that particular job that is always coming up.

Improved Wilson Tongs

WILSON OIL TOOLS CORPORATION

Wilson Oil Tools Corporation, distributors for Wilson and Willard Manufacturing Company, announce improvements in the Wilson tongs.

Rotary Tongs

The latest improvement in the rotary tongs is the application of a Roll-over lever.

IMPROVED WILSON ROTARY TONGS

The tong heads are in no way changed, but the lever differs from the old type in that the tong can be reversed without laying it upon the derrick floor. When changing from making-up to breaking-out drill pipe or vice versa, the operator unhooks one rod which allows the tong to turn to a vertical position. The rod is then re-hooked to the lever and the reversal is then completed. Balancing holes are provided in the hanger for insertion of a match hook in proper position to permit horizontal hanging of the tong.

Casing Tongs

In order to permit maximum convenience in reversing tongs from right to left and vice versa, Wilson and Willard have improved the design of the

IMPROVED WILSON CASING TONGS

hanging device and lever on the casing tongs. The lever has been changed so that two suspension points are placed on the side, allowing a 180 degree swing of the lever when one of the rods is disconnected.

The tong will hang horizontally and will swing to the proper position because of the rigid hanging device and by embodiment of the balancing holes.

The casing tongs also include the two-step spring-latch feature which permits tonging of different diameters. Bushings can be slipped into place and are held without bolts. By using the bushings, one size of tong can be bushed down to fit a wide range of sizes.

The company has adopted the standard color of Chinese red for all its products.

More detailed information is available on request.

New Acme Products

ACME FISHING TOOL COMPANY

The Acme Fishing Tool Company, Parkersburg, West Virginia, has developed several items of new equipment during the past twelve months.

B. & R. WIRE LINE DRILLING CLAMP

B & R Wire Line Drillling Clamp

The fundamental principle of the B. & R. Wire Line Drilling Clamp is the toggle construction which secures the maximum amount of leverage. Other features include ruggedness, safety, powerful gripping ability and simplicity. Brief specifications follow:

Slips or liners: Deep grooves for cable; held in place by dovetail design; easily removed; interchangeable; extra set of slips are available for any size line.

Links: Special design gives large factor of safety and links are forged.

Left hand arm: Equipped with a special safety handle.

Right hand arm: Holds the clevis and tee screw which slides freely on the clevis pin. By special arrangement feature the clamp can be closed and locked with one hand.

Back line: Designed to give balanced strength to the clamp.

Slip retainers: Consist of an additional set of slips.

Bolts: Two long bolts serve o held the slip retainers securely in position; two short bolts connect the arms at the rear of the clamp and act as hinges upon

THE ELLIS VOLUME BARREL

The Ellis Volume Barrel is a working barrel of substantially greater diameter than the tubing and provides a means whereby the volume of a 3-inch or 4-inch working barrel may be delivered through tubing of a much smaller diameter.

The Ellis Volume Barrel provides for a maximum production without excessive cost of equipment, and for easy and quick repairs. It is especially designed and constructed for quantity production, and is made in two sizes. The large type barrel has a capacity of approximately 50 barrels of fluid per hour, and the smaller type has a capacity of approximately 35 barrels per hour. With our patented clutch, it is possible to operate either size barrel on 2-inch, 2½-inch or 3-inch tubing, which eliminates the excessive cost of large size tubing.

Write for Particulars Regarding the Ellis Oil and Gas Separator and the Ellis Traveling Barrel

ELLIS MANUFACTURING COMPANY

Kansas City, Kansas

There Is Always a First Time

Reams of paper would not convince you as much about the quality and performance of our New Tulsa Special Valve Cups as the *"first time"* you use them.

The Dragon Manufacturing Co.

Marietta, Ohio

Dragon Leather Cups · · *New Tulsa Special Composition Cups*

which the clamp swings open and shut

Back clamp pins and clevis pin: Two pins hold the arms securely to the back link.

Clevis: Tapped so as to permit the tee screw to work with ease. Heavy enough to withstand shocks encountered in drilling.

Tee Screw: Equipped with a generous handle and transmits a gripping leverage to the slips in the ratio of ten to one.

IMPROVED BROWN UNDER-REAMER

Brown Underreamer

The Brown Underreamer differs from the old underreamer of the same name in a number of details. The rider assembly now has but one operating lug so that it is necessary to make only one opening in the body. The reamer has three slips which engage three-fourths of the circumference of the hole, making it impossible to cut a pumpkin seed hole or leave leave bumps on the wall, according to the manufacturer. Slips in the underreamer are held stationary. Slips are generous in proportion and will stand considerable dressing before they are worn out. A special dressing anvil is furnished with the outfit. This underreamer was patented by C. R. Brown of Breckenridge, Texas.

Devil's Steel Hand

The Devil's Steel Hand, another product formerly made by the Brown Welding and Machine Company, Breckenridge, Texas, has been taken over for manufacture and sale by Acme Fishing Tool Company. The tool has also been improved. It will now be made in all standard sizes and carried in stock by Acme distributors.

Fingers of the hand are now made of spring steel which is said to readily conform to odd shaped objects.

DEVIL'S STEEL HAND

Jar Down Casing Spears

Slips on he Acme Jar Down Spear are actuated by a spider arrangement on the bottom of the spear. This spider has long fingers which force the slips upon into position when it is desired to take hold in the pipe.

The spear is made in both three and four slip patterns.

Long Seated Trip Spear

The principal feature of the new Acme Long-Seated Trip Spear consists of unusually long slip seats. These slip seats are made long enough to permit the slips to expand to their maximum diameter without extending below the slip seat.

The spear is also fitted with an ingenious setting device which makes it both easy to adjust and sure to grip.

The spear can be had in both three slip and four-slip patterns.

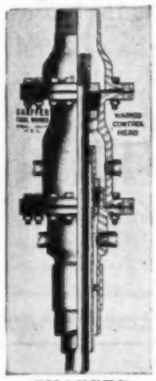
More complete information on each of these products will be provided by the company, upon request.

New Blowout Preventer

SHAFFER TOOL WORKS

A. E. Warren, superintendent of the Associated Oil Company, at Ventura, California, has perfected an improved design control head which has established a record for keeping wells under control.

The foundation of this control head is a blowout preventer having a flange. The preventer is screwed in place on top of casing where it is ready for use. In case of blowout while drilling, a packing assembly can be inserted and held down either by weight of the drill pipe or a bonnet.


SHAFFER BLOW-OUT PREVENTER

A cap with flange to correspond with the flange on the blowout preventer is provided. This cap may be equipped with gas outlets and flanged at both ends with the upper flange mated to another flanged cap. In the upper end of the double flanged cap is another recess for a blowout packing assembly. The upper cap has a flange on one end and the other is threaded to make connection with a Christmas tree or other means of shutting off.

In case a well starts to flow or blow out when drilling or running pipe, a blowout packing assembly is inserted and held in place in the body of the blowout preventer by the drill pipe. The caps and Christmas Tree or gates should have been previously made up and in convenient place on the derrick floor. This assembly, with gates open, can then be picked up as a unit, placed in position, and securely fastened by the bolts in the flanges.

The gates can then be closed until suitable line connections are made. By having a double flanged cap and a seat in this cap for a packing assembly, two strings of pipe or tubing can be taken care of at once. Thus an oil string may be landed on the blowout preventer and a string of tubing landed on the recess in the cap, all under control.

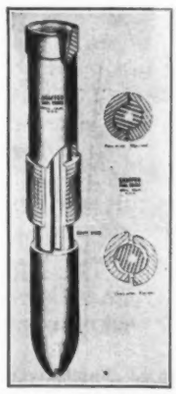
The outfit can be modified in a number of ways. For instance the double flanged cap can be left out and the upper threaded cap can be made to fit directly on the flange of the blowout preventer body.

The outfit is made and sold by the Shaffer Tool Works, Brea, California, from whom further particulars and prices may be obtained.

Shaffer Fishing Tools

The T. & T. Back-off Socket, and the T. & T. Back-off Casing spear are two pieces of new equipment announced by the Shaffer Tool Works, Box 398, Brea, California.

T. & T. BACK-OFF SOCKET


T. & T. BACK-OFF CASING SPEAR

The back-off socket has no slips fitting a taper seat. Instead the place for slips is made with two eccentric seats. The slips, of which there are two, are made with the face to fit the fish and the backs are eccentric to fit the bowl. The slips are held in place by a bell which can be formed with a lip or with teeth similar to an over-shot.

A light spring on the back of the slips maintains a light contact with the fish. In operation on a right hand string after lowering the socket over the fish, it is turned to the right. This tightens the slips on the fish for as hard a pull as may be desired. By using a left hand socket on a left hand string of drill pipe, the socket may be used to unscrew below.

The casing spear is made in a similar way. The only movable parts are the two slips which are expanded to grip the casing by turning the proper direction. Slips are made eccentric to fit the spear mandrel and have a slight taper to help take a firm grip. By releasing the pull on the spear and turning the opposite direction, the spear may be withdrawn.

More information on both products will be mailed, on request, by the company.

Cathead Without Trigger

U. S. MACHINE SHOP

A cathead "without a trigger" is a new product of the U. S. Machine Shop, 501 East Cleveland Avenue, Electra, Texas. Outside of the yoke and collar, the cathead has only three working parts, it is stated. There are no springs in the working parts to lead to failure.

The cathead has a sliding dental clutch, the dentals of which are square on the working surface and sloped to the back. The dentals are placed in an opposite po-

"STURDYBILT" SECTIONAL HOUSES

Save Money for the Oil Industry with An Actual 100 Per Cent Salvage Value

"STURDYBILT" SECTIONAL HOUSES are a realization of the Oil Industry's need for substantial housing facilities at low cost of initial construction and high salvage value.

"STURDYBILT" SECTIONAL HOUSES, adaptable to the peculiar needs of the Oil Industry for oil field lease, pipe line station or refinery use, are designed to afford the utmost in housing accommodations as well as low initial cost, quick construction and 100 PER CENT SALVAGE VALUE.

No. 413. Five-room "Sturdybilt" residence.

No. 304. A "Sturdybilt" field office.

No. 502. Five-room "Sturdybilt" lease house.

Right—No. 504. Six-room "Sturdybilt" residence.

Left—No. 202. Two-room "Sturdybilt" lease office.

No. 411. Four-room "Sturdybilt" lease house with screened porch.

No. 801. "Sturdybilt" bunk house and dining hall.

No. 51. "Sturdybilt" two-car garage.

It is conservatively estimated that in the Mid-Continent field alone the Oil Industry has a "dead" investment of well over a Million Dollars in standard constructed houses which could have been reclaimed had "STURDYBILT" SECTIONAL HOUSES been used instead.

For Seven Years "STURDYBILT" SECTIONAL HOUSES have been the leader in section-built houses for Oil Industry usage . . . their comparative value will endure over all other specifications with their actual 100 PER CENT SALVAGE VALUE against the low or absolute lack of salvage value of other types of oil field housing construction.

Descriptive Booklet on Request

SOUTHERN MILL & MFG. CO.

Manufacturers of "Sturdybilt" Sectional Houses

TULSA, OKLAHOMA.

Say you saw it in The OIL WEEKLY

sition and are engaged "as they happen to be," placing the strain on first one side of the shaft and then the other, which relieves a tendency toward bending it.

The brass yoke on the sliding clutch is manipulated by a lever to which a rope

U. S. MACHINE SHOP CATHEAD

is attached for control from the operator's position. The wheel becomes engaged with the other half of the clutch, makes three-quarters of a turn with the shaft, then runs into a spiral that disengages the dentals and permits the wheel to come back to its original position ready for another stroke. The wheel makes a stroke between three and four feet.

Additional information regarding this cathead may be secured by addressing the manufacturers, the U. S. Machine Shop, 501 Cleveland Avenue, Electra, Texas.

Welding Machine Shows Improvements

LINCOLN ELECTRIC COMPANY

Among the many interesting developments in the machinery building field is the substitution of welded structural steel in place of gray iron castings. The 1927 300 ampere alternating current power supply Lincoln "Stable-Arc" welder illustrated shows the welded steel idea carried out to its logical conclusion. There are only two gray iron castings weighing about 15 pounds total on the outfit which have not been replaced with welded steel construction. Other sizes and types are being changed over to the steel construction as rapidly as possible. The motor and generator end rings, brackets and connecting ring are all made of structural angles rolled up into proper shape and welded together. The feet of the motor generator set are made of drop forgings. The truck wheels are made of T-sections rolled on a special machine. The hub of the wheel is made of steel tube. Control panels are usually made of slate or special non-meatllic compounds, but the panel illustrated is made of sheet steel welded together and welded to the supports.

The underlying idea in the application of the principles of welded steel construction to the Lincoln "Stable-Arc" welder was to meet the severe conditions to which portable welding equipment is subjected. Failure in operation of a welding machine is, in many cases, a serious matter. It is claimed that the steel construction, due to the fact that it will bend rather than break, reduces the liability of failure for the reason that the bent parts may be straightened and the equipment put in operation without waiting for replacement castings. In several cases, the control panel has been crushed with instruments and switches wrecked. However, the equipment was repaired by straightening the panel and switches and put into operation within an hour without instruments.

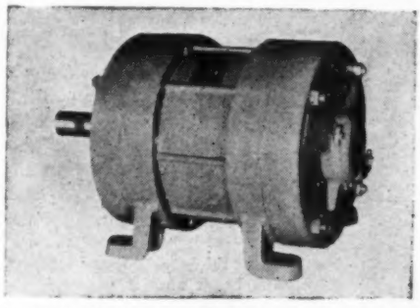
More detailed information may be had from The Lincoln Electric Company, Coit Road and Kirby Avenue, P. O. Box 683, Cleveland, Ohio.

New All-Steel Motor

A new line of all steel, ball bearing polyphase induction motors ranging in size from one to 100 horsepower in all standard voltages and cycles, is announced by the Lincoln Electric Company, Cleveland, Ohio.

Gray iron and malleable castings heretofore used in motors made by this company have been replaced by the new motor with hot rolled steel.

Drop forged steel feet are welded onto the hot rolled steel and end rings of the motor. The end brackets or bearings sup-



LINCOLN ELECTRIC COMPANY MOTOR

ports are also made up of welded steel construction.

Large shafts and bearings have also been used.

Special ventilation features have been built into the motor also, thereby increasing its over-load.

More detailed information may be secured from the company on request.

Save it. This issue should not be laid aside after one reading. It will be handy all next year when you need some equipment for that particular job that it always coming up.

Pipe Line Paint

COOK PAINT AND VARNISH COMPANY

A new underground paint for pipe lines has been developed and introduced to the industry by the Cook Paint and Varnish Company, with general offices and main factory in Kansas City, and branch factories in Houston, St. Louis, Fort Worth, and Cincinnati.

The new paint is called Armorcote reinforced pipe paint. It is an asphaltic preparation. After application the paint evaporates and leaves an asphaltic coating covering the pipe. The covering is said to be practically impervious to temperature changes or climatic conditions.

Further information may be obtained by communicating with the company or any branch office.

New Fuller Products

FULLER MACHINE AND FORGE WORKS

Fuller Machine and Forge Works, R. F. D. No. 2, Box 15, Norwalk, California, has two new products which have been recently put on the market.

Rex Belt Tightener

The Rex belt tightener is made to take a belt from 10 to 16 inches. Clamping members are slotted for clamping bolts, and may be adjusted to take a wide or narrow belt.

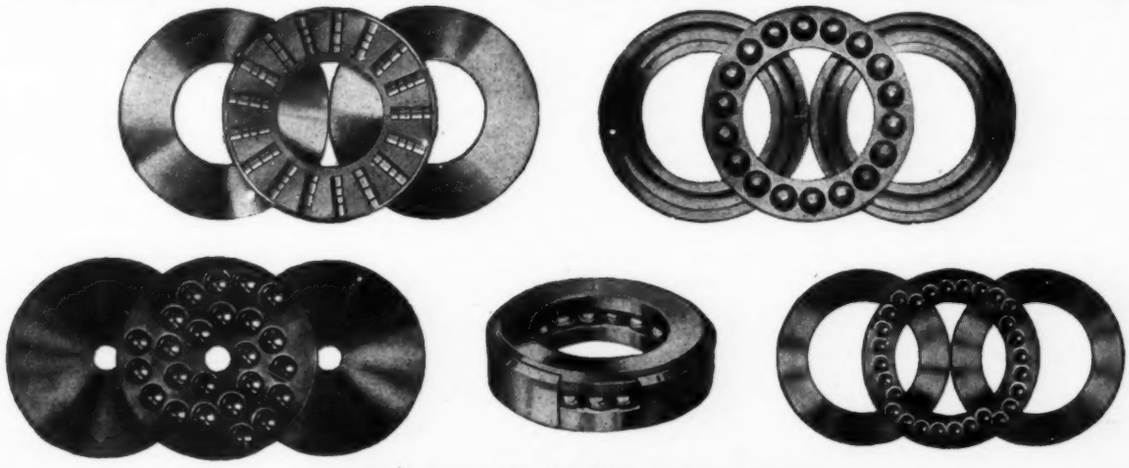
The tightener consists of a large center ter screw, two clamping members and a ratchet wrench.

Five feet of slack may be taken up at one time without readjusting the tightener.

The ratchet wrench may be reversed which releases the tension on the belt, and the wrnech can only be released by manual operation.

Sucker Rod Elevator

Special safety features are incorporated in the sucker rod elevator. Balance



THRUST BEARINGS

LIGHT DUTY HEAVY DUTY

STANDARD SIZES OR TO ORDER

ANY QUANTITY—ONE BEARING OR ONE THOUSAND

Catalog Upon Request

THE GWILLIAM COMPANY

19 FLATBUSH AVE., BROOKLYN, N. Y.

SPENCER TRAILERS **You Might As Well Have the Best**

Two-Wheel Spencer Trailer

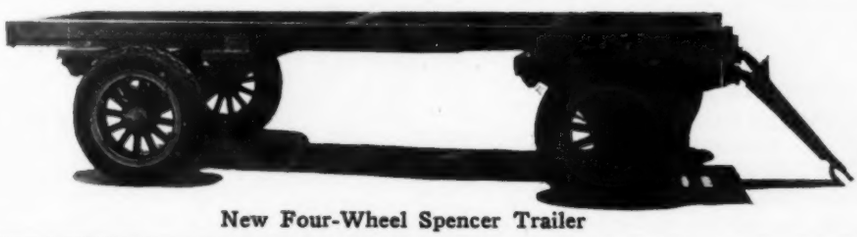
In designing and building the Spencer Trailer the Spencer organization has kept foremost the one thought and desire—to build the best trailer that it is possible to build, and to build a trailer in keeping with present day trucks. To fulfill these requirements a trailer must be very DURABLE, very FLEXIBLE and ADAPTABLE to high speed.

In order to better carry out these transportation requirements a new and modern factory was built this year, modern methods introduced, and additional equipment installed. Other than these improvements our research work is going on at all times.

Manufactured and Sold By

SPENCER TRAILER COMPANY, Augusta, Kansas

Heavy Duty
All Purpose
Easy Running
Light Weight



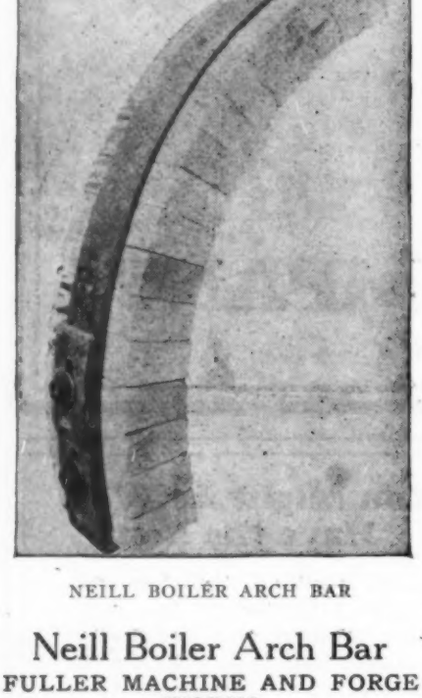
New Four-Wheel Spencer Trailer

is obtained by placing the trunions above the center of the body of the elevator. These trunions are extra heavy and are cast on the body of the elevator.

By securing the bale to the trunions with a large steel washer and a cotter pin, danger of spreading the bale is reduced to the minimum.

Lugs are placed on the side of the elevator in such a way that the elevator can be used only right side up.

The bottom plate is secured to the body by three large screws from the top of the elevator. In case of breakage, the screw heads cannot fall between the tubing and rods.



NEILL BOILER ARCH BAR

Neill Boiler Arch Bar

FULLER MACHINE AND FORGE WORKS

The Neill Boiler Arch Bar, a product put on the market recently by Fuller Machine & Forge Works, R. F. D. No. 2, Box 15, Norwalk, California, was designed for use on the back of tubular boilers to divert the heat through the tubes.

A special feature of this arch bar is that it may be installed on old boilers in repairing them without tearing out the old brickwork.

It is claimed by the manufacturers that the bar may be refilled and used many times by using No. 1 standard arch fire brick.

More complete information may be had by writing the company, at Norwalk.

Columbia Lock Nut

COLUMBIA NUT AND BOLT COMPANY

Columbia Nut and Bolt Company, Inc., Bridgeport, Connecticut, is manufacturing a lock nut for use on machinery where there is considerable vibration.

The nut depends for its security on the pressure of the back of the nut against the surface of the work. The nut consists of two parts which combine as a unit. The inner part is threaded to receive the the bolt; it is also slotted throughout its length and is tapered downward to fit a corresponding taper on the inside of the outer part.

When the wrench is applied to the outer part or binding nut, the inside part travels down the tapered sides, closing the slot and firmly imbedding the threads of the nut in the V's in the thread of the bolt. The inner part pinches and clinches at the same time.

Three Thread Nut Lock

The Gib Nut has been designed by the company to meet the demand for a three thread nut lock. The Gib Nut can be used either side up. The bent down edges of the nut causes the lock coming in contact with the surface of the holding nut to form a jam.

More details on both items can be secured from the company, on application.

New "C" Link

J. P. RATIGAN

The Ratigan "C" link, made by J. P. Ratigan, 1213 Santa Fe Avenue, Los Angeles, is said to represent a new departure in "C" link construction.

The link is made in three sections, which allows free connection and disconnection regardless of the strain imposed. The connecting link has a spreader lug which prohibits the link from caving.

Speed in connecting and disconnecting is given as a special feature. No bolts, nuts, or cotter pins are used in the link, their place being taken by the Ratigan lock pin with eccentric spring latch.

RATIGAN C LINK

Capacity of the link is slightly more than 50 tons.

Further information with literature will be provided by the company upon application.

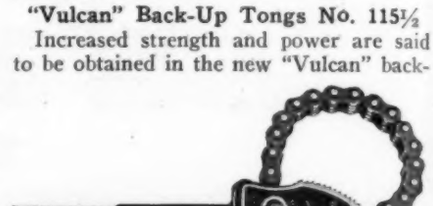
Williams Wrenches

J. H. WILLIAMS & CO.

J. H. Williams & Co., Buffalo, New York, announce two new items to the oil industry.

"Vulcan" Back-Up Tongs No. 115½

Increased strength and power are said to be obtained in the new "Vulcan" back-up tongs, No. 115½, for use on any tool-joint.



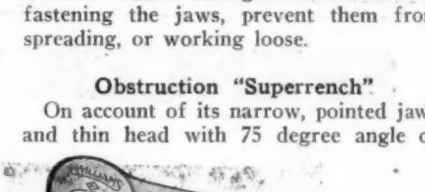
VULCAN BACK-UP TONGS

In the No. 115 "Vulvan," the first five sets of chain links are heavier than the remainder of the chain; in the new "Vulcan," all the links are of large size throughout.

The short, stubby handle is of the right length for rotary work. An extra large U. S. Standard through-bolt and nut for fastening the jaws, prevent them from spreading, or working loose.

Obstruction "Superrench"

On account of its narrow, pointed jaws and thin head with 75 degree angle of openings, the "Superrench" is especially desirable to awkwardly placed nuts and bolts.



WILLIAMS OBSTRUCTION "SUPERRENCH"

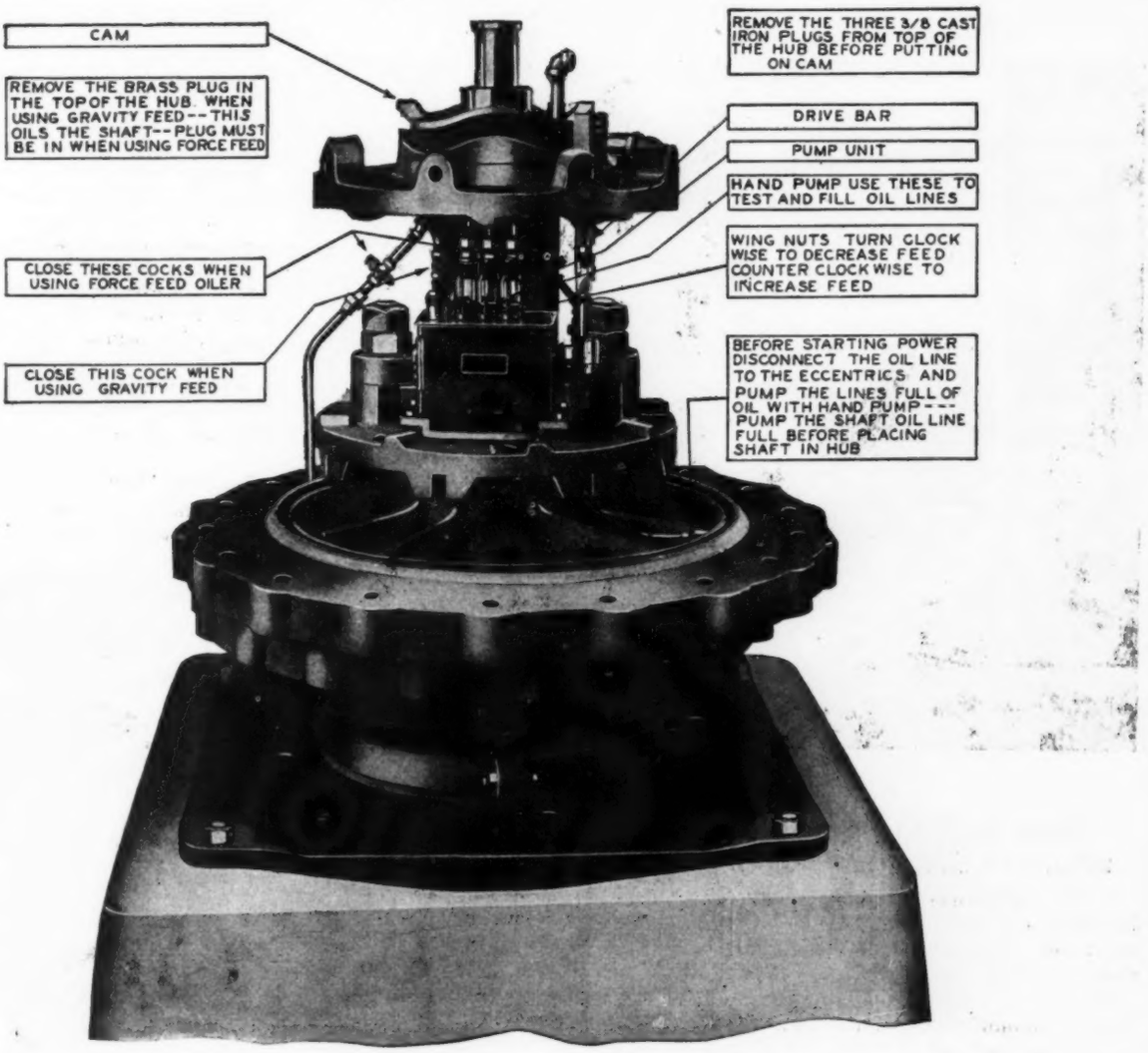
The jaws of both heads project from the same side of the handle, offering a comfortable grip for the operator's hand. In the "superrench" the jaw that receives the strain near its point is reinforced by the handle, giving the wrench the peculiar feature than when used in the natural manner for comfort, its strength is considerably increased.

The wrench is furnished in a wide variety of sizes for all popular U. S. and S. A. E. standard nuts and cap screws.

Like all "Superrenches," the Obstruction pattern is forged from chrome-molybdenum steel.

The wrench is furnished heat-treated, rust-proof, with heads buffed bright.

Further information on both products will be supplied by the company, on request.


CAM
REMOVE THE BRASS PLUG IN THE TOP OF THE HUB WHEN USING GRAVITY FEED -- THIS OILS THE SHAFT -- PLUG MUST BE IN WHEN USING FORCE FEED
CLOSE THESE COCKS WHEN USING FORCE FEED OILER
CLOSE THIS COCK WHEN USING GRAVITY FEED
REMOVE THE THREE 3/8 CAST IRON PLUGS FROM TOP OF THE HUB BEFORE PUTTING ON CAM
DRIVE BAR
PUMP UNIT
HAND PUMP USE THESE TO TEST AND FILL OIL LINES
WING NUTS TURN CLOCK WISE TO DECREASE FEED COUNTER CLOCK WISE TO INCREASE FEED
BEFORE STARTING POWER DISCONNECT THE OIL LINE TO THE ECCENTRICS AND PUMP THE LINES FULL OF OIL WITH HAND PUMP --- PUMP THE SHAFT OIL LINE FULL BEFORE PLACING SHAFT IN HUB

New Marion Equipment

Factory Branches located in: Tulsa, Okla., Bristow, Okla., Okemah, Okla., Wilson, Okla., Eureka, Kansas, Bradford, Pa., Kevin, Mont., Salt Creek, Wyo., Long Beach, Calif., Big Springs, Texas, Borger, Texas, Dallas, Texas, Luling, Texas, McCamey, Texas, Odessa, Texas, Ranger, Texas, El Dorado, Ark.

This new Marion Band Wheel is constructed with two sets of angle drive spokes and two sets of round spokes to true up the wheel. It cannot break or distort with any load the belt can pull.

All shaft bearings are bronzed bushed and are easily removed and new bushings put in place. The thrust bearings are heavy bronze plates and run in a bath of oil.

The powers are fitted with a Force Feed oiling system that puts the oil to each eccentric and to the shaft under pressure so that the oiling is positive. Only new oil is used. No dirty oil reaches the bearings.

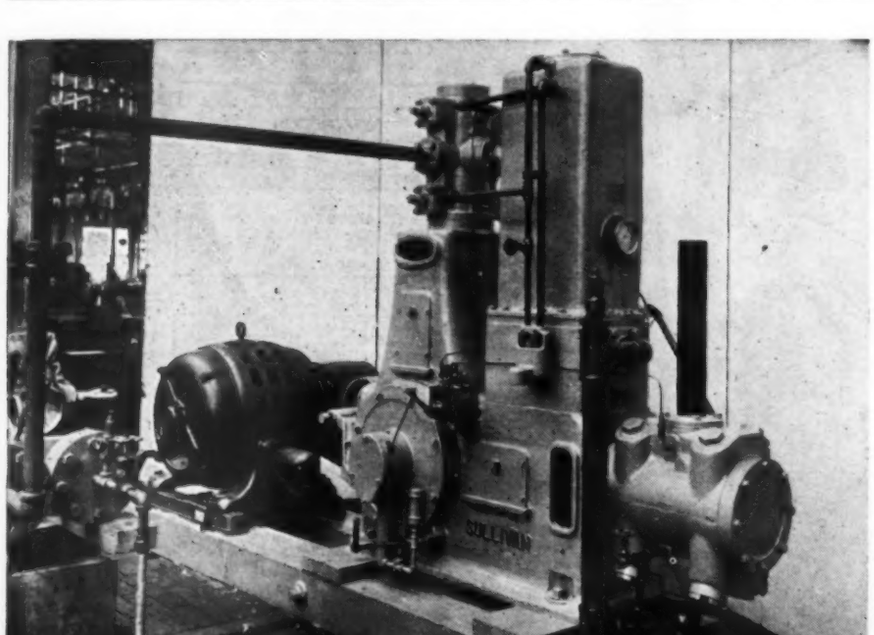
These powers are built in two sizes—No. 999—Heavy Duty Power, 18-inch stroke, double eccentric—16 ft., 18 ft. or 20 ft. band wheel with 15-inch face. No. 2424 Extra Heavy Duty Power with 24-inch stroke, double eccentric, 24 ft. band wheel with 18-inch face.

Write for descriptive literature.

THE MARION LINE

Marion Machine, Foundry & Supply Company, Marion, Indiana

Say you saw it in The OIL WEEKLY



NEW SULLIVAN AIR COMPRESSOR

New Sullivan Items

SULLIVAN MACHINERY CO.

Sullivan Machinery Company, 122 S. Michigan Avenue, Chicago, has brought out a new compressor designed especially for use in air and gas lift work.

This new type compressor is an "angle compound" machine. Its distinguishing feature is that the low pressure cylinder and frame are horizontal, while the high pressure frame and cylinder are placed at an angle of 90 degrees, or vertically. According to the manufacturers, this enables the low pressure and high pressure members, such as the pistons, piston rods, crossheads and connecting rods, to be exactly balanced. The two connecting rods seat side by side on the same crank pin, so that the drive shaft is very short and the machine correspondingly small in area.

These compressors are built in a range of capacities and pressures suited to the needs of oil field work. The machine illustrated has a displacement capacity of 14,000 cubic feet of gas per hour and is good for 750 pounds pressure. The outfit is six feet, 10 inches long, three feet, 10 inches wide, and six feet, eight inches high. It can be transported on a single skid or set up on a couple of timbers for short belt drive from a motor or gas or oil engine.

Flexibility is a chief feature of the machine. It is common practice to connect two units together as a twin with a single motor on the driving shaft between them.

Cylinders and piping of the compressor are arranged to allow condensed gasoline to be drained out readily.

All working parts such as frames, bearings, crossheads, and connecting rods are substantially built to meet the demand for heavy service such as is usual in oil field operation.

The outfit is equipped with positive force feed lubrication, wafer plate valves with low lifts and large port areas.

The vertical intercooler is located just in the rear of the high pressure cylinder.

In these new machines the air is passed through two nests of copper tubes and the chamber of the shell is entirely filled with cooling water which is constantly renewed.

Sullivan Machinery Company, 122 South Michigan Avenue, Chicago, announces a number of new equipment items of interest to oil producers.

"Bottom Discharge" Core Barrel

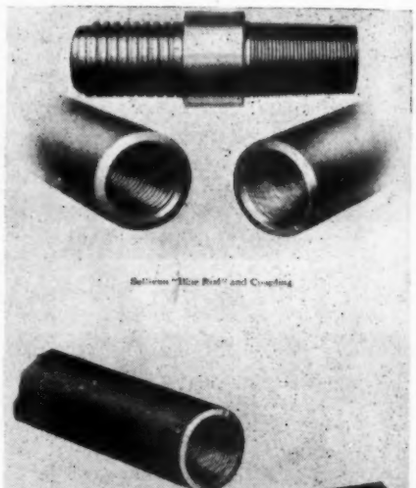
The Bottom Discharge core barrel consists of a duoble tube, swivel type, ball bearing core barrel, in which the circulating water or mud fluid is discharged through openings cut in face of the bit. Four faces provide space for setting the diamonds on the bottom of the bit, these being connected by a thin wall behind which, in the recesses thus formed, water channels have been cut.

The spring ring core lifter is carried in a beveled lifter shell screwed onto the inner tube of the barrel. The lower end of this shell fits into a counter-bored wear ring, driven into the belt, which forces the circulating fluid to pass circulating fluid to pass through the water course in the body of the bit.

Extra large passageways have been provided in the head of the barrel and sharp corners in these passages have been avoided. The mud does not come in contact with the threaded parts of the outer tube. The ball bearings in the head are equipped with a grease gun attachment, and when thus lubricated, are well protected against the cutting action of the mud fluid. Free swiveling of the head is assured. Unusually large clearance has been provided between the outer and inner tubes, for the passage of the mud fluid.

Sullivan "Blue" Rods and "Bull' Rods

To meet the requirements of oil field work, Sullivan engineers have developed



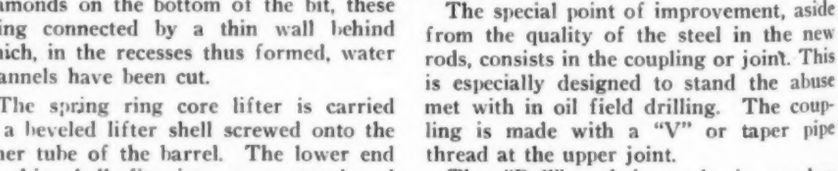
SULLIVAN "BLUE" RODS AND "BULL" RODS

two new types of drill rods, especially suited to conditions encountered in structure drilling or deep testing in oil field service.

The trend toward larger diamond drill holes and the frequent use of fishtail bits for soft and loose formation, has made desirable a change in rod joints on the larger sizes of rods used in this work.

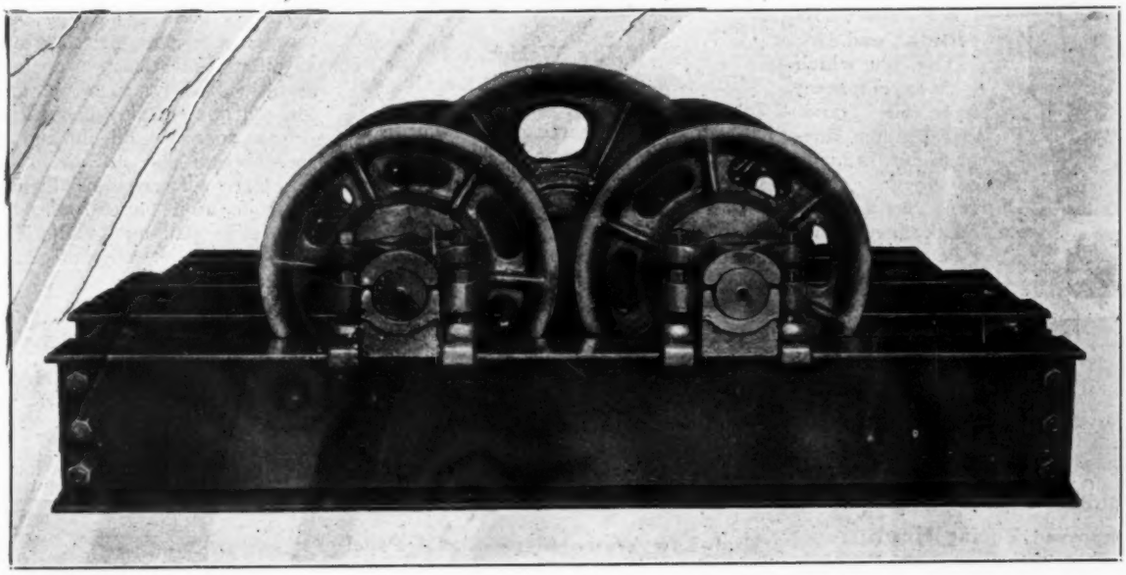
The special point of improvement, aside from the quality of the steel in the new rods, consists in the coupling or joint. This is especially designed to stand the abuse met with in oil field drilling. The coupling is made with a "V" or taper pipe thread at the upper joint.

The "Bull" rod is made in random



SULLIVAN CORE BARREL

BOYKIN
ROLLER BEARING
CROWN BLOCK
TYPE "C"



All Types of Boykin Roller Bearing Crown Blocks are furnished with chrome-nickel steel sheaves, and machined wire line grooves.

The Inner and Outer Bearing Race Rings are made of high grade forge steel, case-hardened and ground.

The Trunnions, Inner and Outer Race Rings are held perfectly stationary allowing the Roller Bearing to revolve freely with the sheave.

All Blocks are equipped with the alemite system of lubrication.

SPECIFICATIONS

Center Sheave	32" Diameter
Outside Sheaves	24" Diameter
Trunnions	3 15/16" Diameter
Inside Beams 12" 40 lb.	7' Long
Outside Beams 12" 40 lb.	6' 6" Long
Bearing	Roller Type

Note: This block can be made in any combination desired. Write for literature and prices.

Boykin Machinery & Supply Co., Inc.
BEAUMONT—HOUSTON

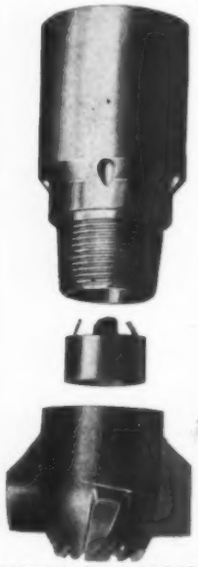
lengths, approximately 20 feet long, from seamless steel tubing with a manganese content.

In the joint used with the "Bull" rods there is no coupling. The rod is upset internally at each end and a female thread is turned on one end and a male thread on the other. Provision has been made in the upsetting for re-turning the thread two or three times if necessary after long use.

Two-Piece Core Bit

H. C. SMITH MANUFACTURING COMPANY

H. C. Smith Manufacturing Company, Whittier, California, has added to its line of equipment a two-piece core bit, a feature of which is the renewable cutting head.



SMITH TWO-PIECE CORE BIT

The bit which is a development from the standard Phipps one-piece bit, is made of forged steel. It is recommended because of its quick renewability in places where facilities for rebuilding may not be readily available.

Additional information will be supplied by the company, on inquiry.

Improved Tubing Head

The salient feature of the tubing head is in the fact that the inside diameter of the body is the full diameter of the casing. This allows the tubing, tubing catcher and packer to be raised or lowered through the body without interference.

SMITH IMPROVED TUBING HEAD

To release the head it is necessary to loosen only four nuts. The complete packoff assembly remains intact on the first stand when pulling tubing.

The Christmas Tree may be screwed onto the packing assembly as one unit and dropped into the body.

All parts of the tubing head subject to pressure are made of forged steel.

More specific information will be mailed on request to the company.

New G. E. Products

GENERAL ELECTRIC COMPANY

General Electric Company, Schenectady, New York, has developed a number of new products during the past few months, several of which can be used in the oil fields.

New Welder

The new welder is called the Duo-Arc Automatic Welder, and consists of a standard travel carriage on which are mounted two automatic welding loads, and two reels of electrode wire. With this apparatus the manufacturers claim that one can supervise the two welding arcs.

The new welder is of particular value in butt welding heavy plate. This is accomplished by two electrodes working one behind the other simultaneously.

For welding half-inch plate, the seam is prepared by beveling to an agle of 30 degrees, total opening. With three-sixteenths-inch electrode and approximately 250 to 300 amperes in each arc, a speed of welding of from five to seven inches per minute may be obtained.

High-Low Water Alarm Signal Panel

The new signal panel has been designed for use in pump installations as a warning signal for the purpose of calling an attendant in case of danger from overflow or emptying of the tank. The panel is governed by one or two float switches.

With this panel an audible signal sounds immediately when either the predetermined high or low level of water is reached. The gong can be silenced by the attendant upon his arrival, and the silencing switch does not have to be manually reset after the float switch takes a normal position. "High" and "low" signal lamps are provided, either of which lights when the predetermined level has been reached, remaining lit until the float takes a normal position.

The panel can be used for a one-level signal by omitting the float switch for the other level. It can also be used on pressure systems, but when single-pole float or pressure switches are used, it is necessary to add a relay in place of the other pole.

New Float Switch

The new switch is for use in control circuits only. It can be used to control the line contactor of alternating or direct current, automatic starters. The switch has a capacity for handling one 600-ampere, two 300-ampere or four 150-ampere alternating current or direct current contactors at from 110 to 550 volts.

Further information on any of these products can be obtained from the company direct.

Separator Control

TRUMBLE GAS TRAP COMPANY

A new automatic control for oil and gas separators has been perfected by the Trumble Gas Trap Company and is now used on all separators operating at a pressure below 250 pounds per square inch.

This control is a single unit, but takes the place of two valves and governs the flow of oil from the separator to keep a level between a maximum and a minimum.

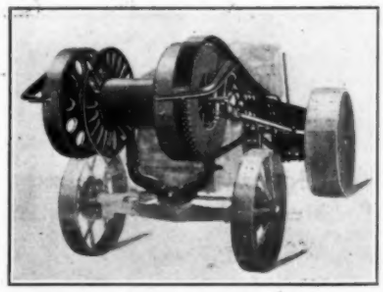
This is accomplished by both oil and gas going through the control and a rise of oil in the separator operating a mechanism that restricts the gas outflow, consequently building just sufficient pressure to force the oil out and keep a balance between the outflow of oil and gas.

Complete description of this device is available in a bulletin on Oil and Gas Separation sent out by the Trumble Gas Trap Company, Higgins Building, Los Angeles.

Bear Cat Hoist

SHAFFER SPECIALTY COMPANY

The Shaffer Specialty Company's Bear Cat hoist especially built for



SHAFFER BEAR CAT HOIST

bailing and for pulling rods and tubing entered the field late in 1926, working as an application on the 10-20 McCormick-Deering industrial tractor and the Fordson tractor. The rear end attachment is the newest of the Bear Cat units. It is designed to take care of tubing and rods and handle them at less expense.

The hoist is anchored in the derrick so that the line pull comes direclty over the crown pulley. In bailing, the hoist has made the round trip in a 3000-foot hole in less than eight minutes when there was 200 feet of fluid in the hole, using a five-inch, 27 foot sand pump.

The channel frame is extended to the rear, permitting space for a tool

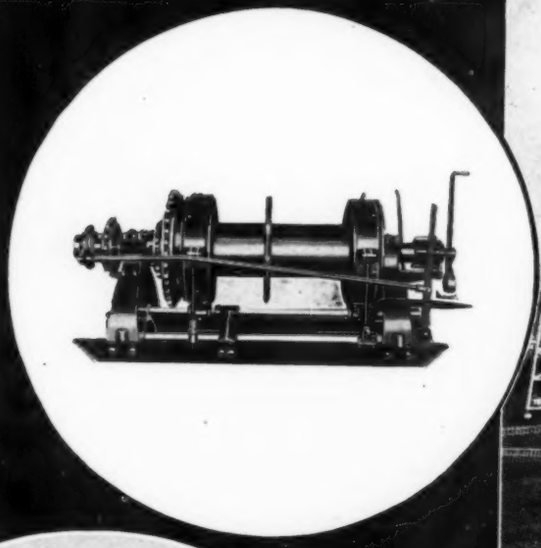
R. F. Garland & Co.

Oil Producers

OFFICES

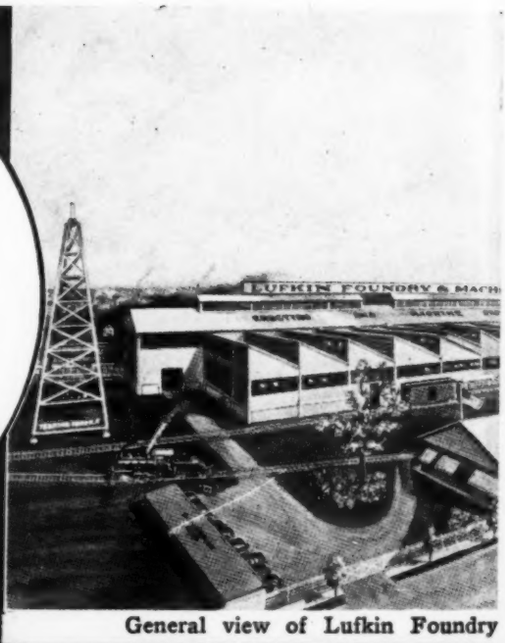
1201-6 Atlas Life Building
TULSA, OKLAHOMA

L U F

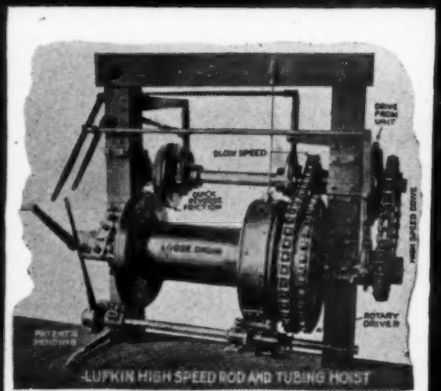


Lufkin double Brake Hoist.

Lufkin Baby Unit for pumping individual wells.



General view of Lufkin Foundry



Lufkin high speed rod and tubing Hoist

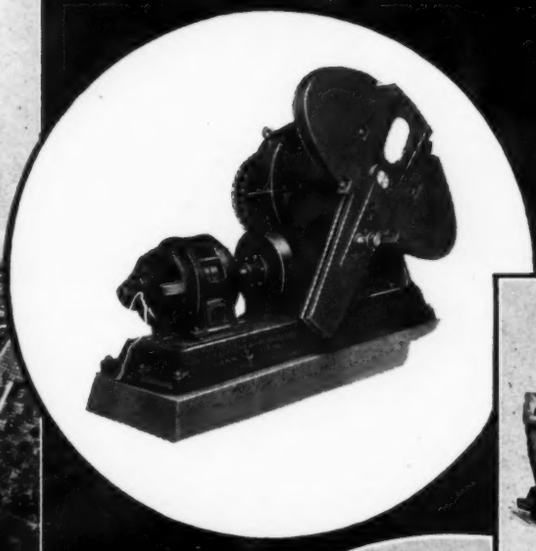
Manufactured at Lufkin, Texas
By
THE LUFKIN FOUNDRY AND MACHINE CO.

DISTRICT OFFICES:
LOS ANGELES TULSA NEW YORK HOUSTON

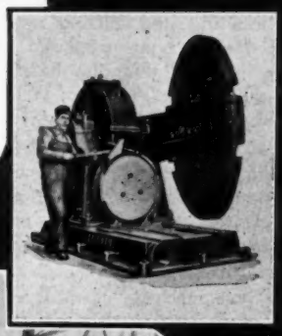
WAREHOUSES:
SEMINOLE, OKLAHOMA ODESSA, TEXAS EL DORADO, ARKANSAS

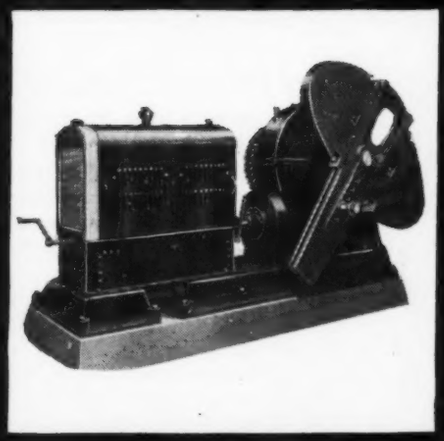
K I N

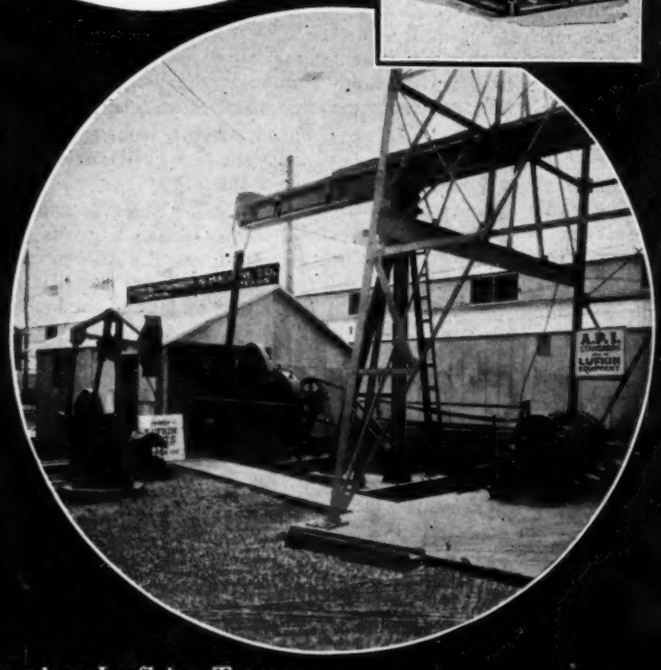
and Machine Company, Lufkin, Texas



Lufkin Units are now equipped with a powerful brake. Every operator will appreciate this added convenience.







Manufactured at Lufkin, Texas

By

THE LUFKIN FOUNDRY AND MACHINE CO.

DISTRICT OFFICES:

LOS ANGELES TULSA NEW YORK HOUSTON

WAREHOUSES:

SEMINOLE, OKLAHOMA ODESSA, TEXAS EL DORADO, ARKANSAS

box, and thus eliminating necessity for a tackle wagon.

The hoist has a maximum pull of 11,500 pounds on a single line. The spooling capacity is 5000 feet of one-half-inch line or 3000 feet of five-eighths-inch line. The line speed, based on 1000 r.p.m. motor and first rap on drum in low gear, is 60 feet per minute.

The drum is free, made of steel and works on roller bearings. The chain does not run when the clutch is disengaged. The drum shafts take only the shearing strain, and an auxiliary flange on the drum stores the surplus line.

More information can be had from the Shaffer Specialty Company, Tulsa.

Bolt Cutting Machine

WILLIAMS TOOL CORPORATION

A bolt threading and cutting machine of the geared head type, particularly designed for high production, has been placed on the market by the Williams Tool Corporation, Erie, Pennsylvania, after several years of experiment and test.

The machine is compact, follows the modern trend of machine tool design by having the motor at the base instead of above, and is said to have other new and important features.

This new bolt machine uses large die-holders to support small renewable dies of high-speed steel. The large die-holders do not have to be removed from the head in order to change dies.

To cut a different size thread, the operator can quickly change dies simply by loosening the locking screw and taking the die from the holder—changing the whole set in a few seconds.

The operator has complete control of the machine from one position, and can get seven different speeds by operating only two levers.

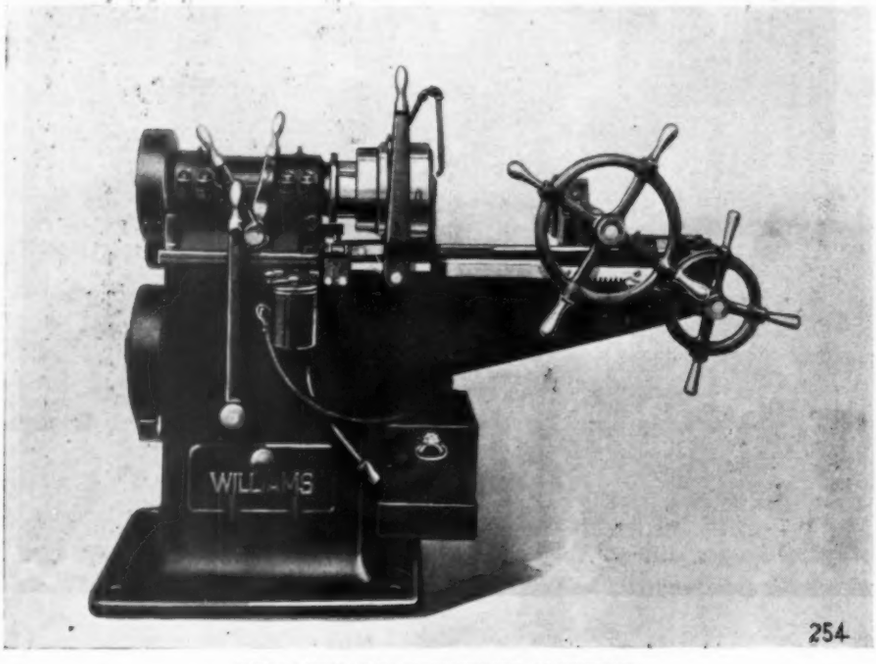
To change gears it is only necessary to ease out on the clutch, which permits the placing of one or both gear shift levers. A speed plate back of the levers gives the correct position for each size of bolt.

Another outstanding feature of the mechine is the simplicity of the automatic die head. The several parts—die head, die head support, cam, cam ring, die holders and shell—are all enclosed, forming one compact unit.

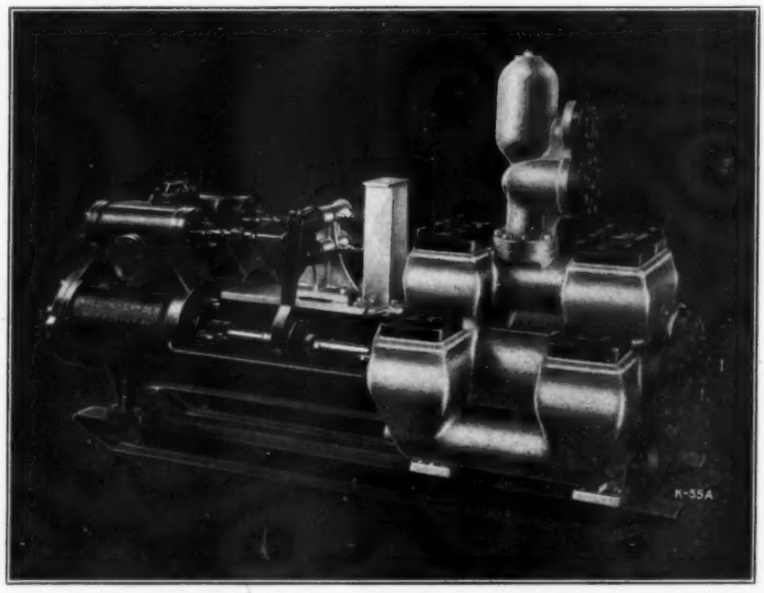
The shell, which is controlled by compression springs, travels backward and forward on the die head and in turn opens and closes the dies. The head is adjusted by pulling the lever forward, and is released by a trip rod adjusted in the carriage.

This trip rod can be set to give any desired length of thread within the capacity of the machine. The dies are adjusted by releasing the cam ring from the shell. A spanner wrench engaged in the cam ring, is moved backward or forward in order to give a larger or smaller adjustment, for the size of thread to be cut. The cam ring is then locked to the shell, holding the die-holders in a fixed position.

More information can be had from the company on request.



WILLIAMS BOLT CUTTING MACHINE



WILSON-SYNDER LONG STROKE SLUSH PUMP

Long Stroke Slush Pump

WILSON-SNYDER MANUFACTURING COMPANY

Wilson-Snyder Manufacturing Company, Pittsburgh, Pennsylvania, has developed and put into successful operation a long stroke slush pump, size 14x7x18.

On account of the fewer reversals necessary with the new type pump when handling large volumes of mud against high pressures, the unit has proven popular with operators.

The pump is of direct flow, open-type design. Balanced piston steam valves are used.

Lubrication is automatic.

The construction of the new slush pump consists of two principal castings so that there is but one bolted connection. Central strain is counteracted by the use of six pump feet, four under the discharge and two under the steam end, all bolted to steel "H" beam skids. Suction opening is part of the fluid end casting. The air chamber, strainer chamber, and discharge are one casting.

The pump is now being furnished in two sizes: No. 18, 14x7x18, and No. 16, 12x6x16,

Additional data is available from the company upon inquiry.

General Offices
65 Broadway, New York

AMERADA CORPORATION

Petroleum Building
Tulsa, Oklahoma

Shaffer Oil and Refining Company

Producers—Refiners—Marketers

DEEP-ROCK

This Trade Mark is your protection in buying highest quality petroleum products

Producing, Land and Pipe Line Depts.,
424 South Cheyenne Avenue
TULSA, OKLA.

Refinery at Cushing, Okla.

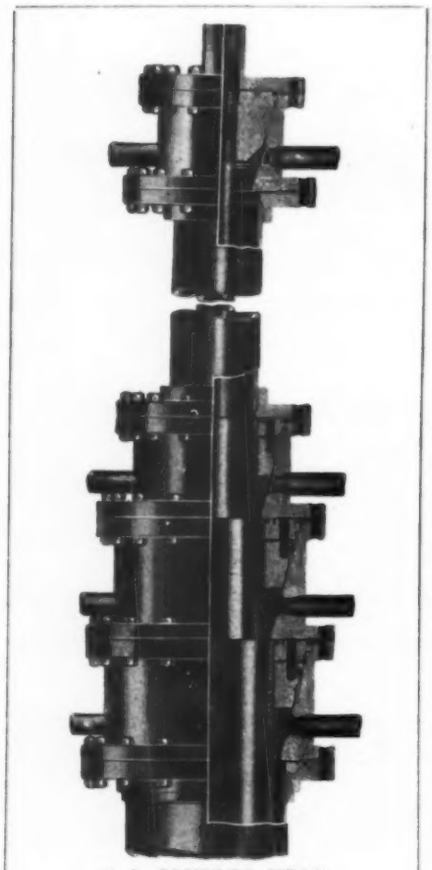
Sales Office: 300 W. Adams Chicago, Ill.

New Control Head

U. S. TOOL COMPANY

The U-S Control Head, manufactured by the U-S Tool Company, Long Beach, California, for flanging together strings of well casing, is a new device just being introduced to the trade.

With this tool all operations in flanging are done above the last string of casing set. The only threaded joint is the bottom flange which is screwed on the



U. S. CONTROL HEAD

string of surface casing, or if stove pipe is used for the surface string, the flange is screwed on a nipple that is welded to the stove pipe. On this flange is bolted a flanged spool fitted with a set of long slips for the next size casing. When the casing is set at the desired place, the slips are placed in the spool and the casing held.

A split flange bolted to the top flange of the spool with a rubber packing ring pack off the casing for cementing. After cement has set the packing ring and split flange are removed and the casing cut off flush with the top flange of the spool. A ring is then set in the spool on top of the slips and the end of the casing welded to this ring.

Other strings of casing are set in the same manner. A flanged tubing head with tubing carrier and flow flange is then bolted to the top spool completing the flange up to the setting of the tubing for the well.

All spools are provided with a groove in the inside wall connecting with the gas outlet. A companion flange is used with each spool for the drilling nipple connection.

This control head is designed for pressure as high as 3000 pounds per square inch.

More information can be had from the company.

Crawler for Trucks

UNIVERSAL CRANE COMPANY

Combining the high traveling speed of a motor truck and the soft ground traveling ability of a crawler, the Universal Motor Truck Crawler, recently introduced into the oil fields by the Universial Crane Company, Swetland Building, Cleveland, Ohio, is attracting much attention among operators.

The outfit consists of an attachment that fits on any ordinary four-wheel truck, changing it into an eight-wheel, rubber tired truck, with six of these wheels grouped at the rear of the truck where a crawler can be quickly put around them, giving a full crawler rear end for soft ground travel.

It is claimed by the manufacturer that approximately 80 per cent of the total load is carried on the rear end, since the "box form" arrangement of the six rear wheels gives a very substantial ground bearing.

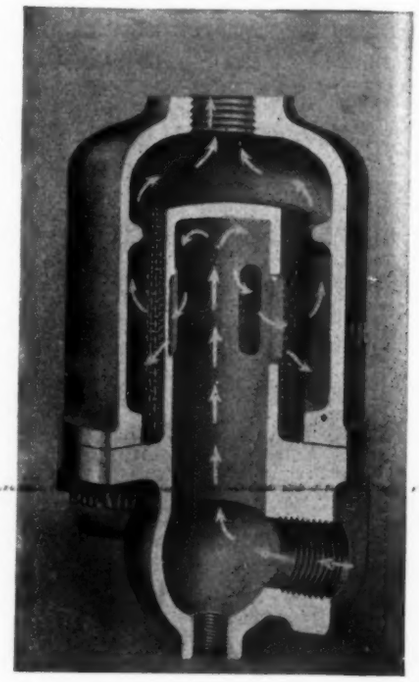
The unit travels from job to job on the eight rubber tired wheels at a speed of 15 miles per hour.

The crawler track is carried just above the rear wheels much in the same manner as fenders on an ordinary car. About five minutes are required for attaching the treads. Each tread has 30 inches of length bearing on the ground.

In installing the attachment on a truck, the rear truck wheels are removed and replaced with double or split wheels, fitting on the original wheel bearings. In the opening between the wheels are located six equally spaced rollers, giving openings into which the tread links fit. An auxiliary shaft is mounted in front of the standard rear axle, which does not carry any wheel but acts as a pivot bearing for a hanger which carries a rocker arm with a big wheel in front and a small wheel in back.

All driving of the unit is done by the standard truck mechanism.

If when the crawlers are on, soft ground makes it impossible for the front steering wheels ot steer the unit, a large 12,000 pound spring adjustment on the auixiliary



GAST AIR SEPARATOR

shaft permits tranfering all the load to the crawler rear end, and the unit is then steered by an attachment controlling the crawlers themselves.

Additional information can be obtained concerning the outfit from The Universal Crane Company, Swetland Building, Cleveland, Ohio.

Gast Air Separator

SMITH MONROE COMPANY

The Smith Monroe Company, South Bend, Indiana, announces the Gast Air Separator for taking out water and oil found in compressed air.

The air separator is automatic in its operation. It is a compact, self-contained unit, and is suitable for installation either at the compressor or any place in the supply line that may be desirable. However, it is generally recognized that where dry air is necessary, the most satisfactory method is to place the separator as closely as possible to the apparatus which is to use it.

Operation of the Gast separator is that of a filter which removes water and oil carried in the air. It uses the principle of air passing quickly thought a number of

UNIVERSAL MOTOR TRUCK CRAWLER

God hath chosen the foolish things of the world, to confound the wise; and God hath chosen the weak things of the world, to confound the things which are mighty.

I Corinthians.

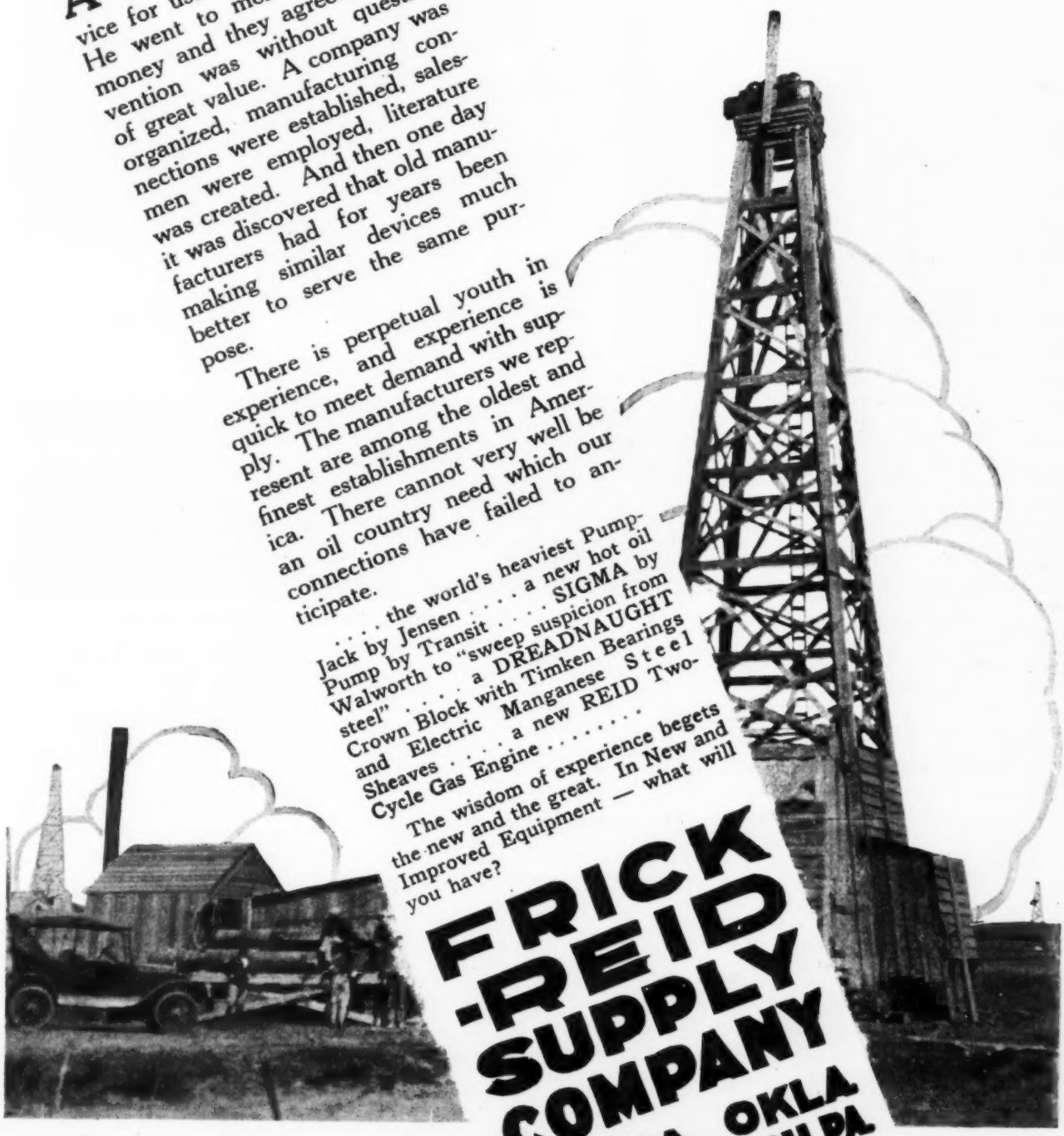
What is "New" In Equipment?

A FEW years ago an ingenious dreamer invented a device for use in the oil country. He went to men who control money and they agreed the invention was without question of great value. A company was organized, manufacturing connections were established, salesmen were employed, literature was created. And then one day it was discovered that old manufacturers had for years been making similar devices much better to serve the same purpose.

There is perpetual youth in experience, and experience is quick to meet demand with supply. The manufacturers we represent are among the oldest and finest establishments in America. There cannot very well be an oil country need which our connections have failed to anticipate.

. . . . the world's heaviest Pump-Jack by Jensen . . . . a new hot oil Pump by Transit . . . . SIGMA by Walworth to "sweep suspicion from steel" . . . . a DREADNAUGHT Crown Block with Timken Bearings and Electric Manganese Steel Sheaves . . . . a new REID Two-Cycle Gas Engine . . . . . .

The wisdom of experience begets the new and the great. In New and Improved Equipment — what will you have?



FRICK-REID SUPPLY COMPANY

TULSA, OKLA. PITTSBURGH, PA.

thicknesses of fine wire screen which forms thousands of small baffles.

A chamber which contains a smaller chamber made of several layers of wire screen lets the dirty air pass into the inside of the screened chamber and then out through many meshes of wire into the outer chamber. Moisture, oil and impurities drop out of the air as it zig-zags through the wire mesh and falls to the bottom of the chamber where they are drained away. An added convenience is to equip the drain pipe of the separator with an air or steam trap which will drain off all water and oil automatically as accumulated.

Waukesha Equipment

WAUKESHA MOTOR COMPANY

Waukesha Motor Company, Waukesha, Wisconsin, has recently added to its line of engines an outfit for heavy duty oil well drilling. The latest outfit is recommended for cable tool drilling.

Three sizes of engines are provided with the unit: 75, 100, and 125 horsepower. Otherwise the units are identical.

The 125 horsepower unit is designed to start a hole with 24-inch tools. All three of the outfits are equipped with heavy duty Bessemer reversible clutch and brake. The clutch brake unit is mounted upon double-row, self-aligning SKF ball bearings. The clutch assembly is attached to the engine through a "Fast" flexible coupling. The pulley face is 18 inches and the diameter is 24 inches.

A Waukesha completely enclosed reduction gear giving 3.24 to 1 reduction ratio. A twin disc dry plate clutch enclosed and located between the reduction gear and the engine flywheel is provided to disconnect the reversing clutch when starting the engine.

All engines are provided with openings on the timing gear housing and the flywheel housing to take standard Leece-Neville generator and starting motor.

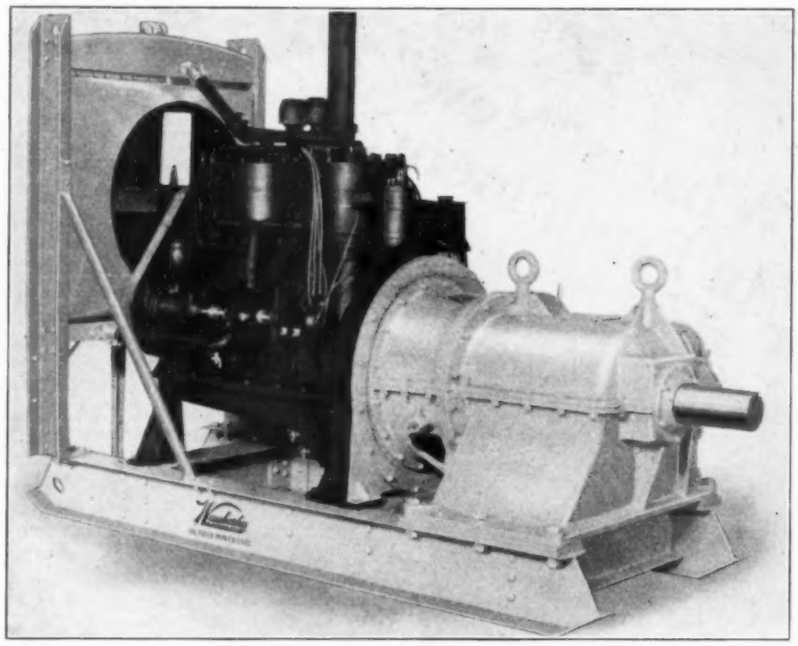
The engines are of the four-cylinder heavy duty type and operate on either gas or gasoline.

The "Duplex" fresh oil lubricating system consists of forced lubrication to main, connecting rod and camshaft bearings, and an auxiliary fresh oil supply direct to the cylinders.

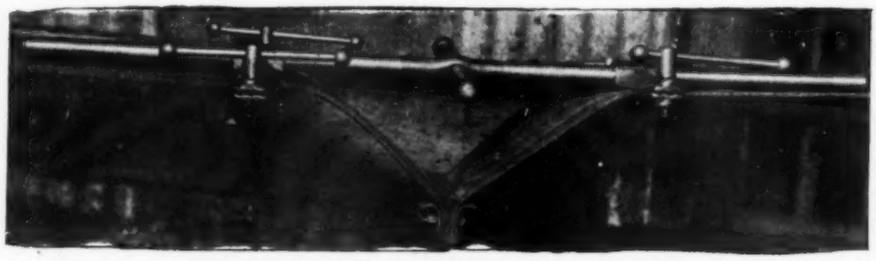
The Waukesha Motor Company, Waukesha, Wisconsin, has added a new reduction gear to its line of oil field supplies.

Chief among the advantageous features of the new outfit are: accessibility without dismounting or disturbing the engine and gear alignments, ventilated air-cooled clutch of special twin disc design, clutch removable without disturbing the reduction gear.

The assembly has large tail shaft, big eye-bolts, and a large reservoir in which the herring-bone gears and bearings operate.



WAUKESHA HEAVY-DUTY DRILLING ENGINE



FEDERAL SUPPLY COMPANY BELT TIGHTENER

Federal Belt Tightener

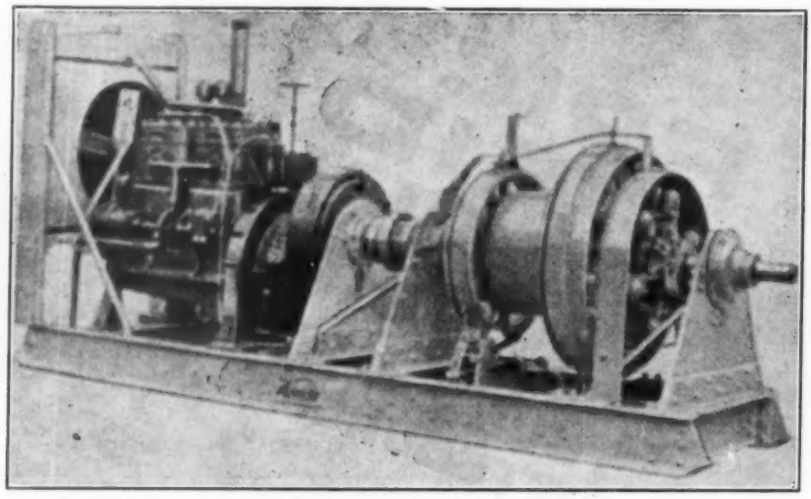
FEDERAL SUPPLY COMPANY

An all steel belt stretcher or tightener is being manufactured and distributed to the oil country by the Federal Supply Company of Fort Worth, Texas. The stretcher weighs approximately 80 pounds and can be applied and operated by one man. It is made in two sizes—California type and Mid-Continent type.

The operation of the stretcher is on the vise principle, the two handles on one side being spun out when the belt is slipped on. All four handles then are tightened and the screw in the center is turned until the desired tautness is obtained. A ratchet is being made for the tighteners as this will afford easier operation than the vise handle in the center. The tool is equipped with a leather kit containing two belt clamp socket wrenches and a belt punch.

The tighteners are made of electric steel and will handle six-inch to 14-inch belts and 14-inch to 18-inch belts.

Further information may be obtained by communicating with the company direct.

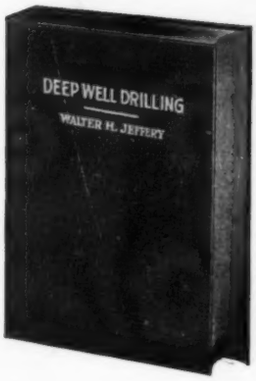


WAUKESHA REDUCTION GEAR

Second Revised Edition . . . .

Deep Well Drilling

By WALTER H. JEFFERY



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One Hundred Thirty-One Pages New Matter Added

A comprehensive handbook covering in detail modern practices of well drilling by the standard or cable tool and the hydraulic rotary system.

During the few years that have elapsed since the publication of the first edition of "Deep Well Drilling" there have been so many improvements in well drilling methods and equipment that it was found necessary to practically rewrite the book for this second edition. This book furnishes complete information on drilling and the use of tools and equipment necessary to complete wells efficiently.

This book is a reference work for the engineer and the student and a handbook for the practical driller. Written by a man who has familiarized himself with his subject through a lifetime association with it. 662 pages, illustrated, flexible binding. Price Postpaid $6.00.

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—is so accessible to the entire Mid-Continent Oil Fields that the majority of the major interests in the Oil Industry have selected this location for their headquarters.

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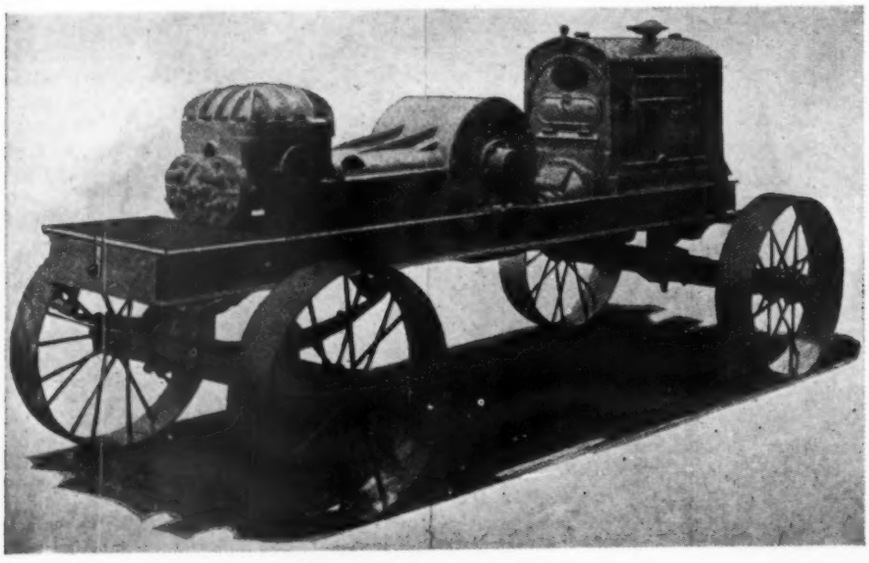


WHEATLEY PORTABLE PUMPING OUTFIT

Wheatley Pumping Units

WHEATLEY BROTHERS

With the growth of the need for portable pumping outfits in the petroleum industry a number of outfits have been placed on the market. The latest of these is one just introduced by Wheatley Brothers General Machine Works, 1906-12 Wyandote Street, Kansas City, Missouri.

The unit consists of a five by ten horizontal duplex piston pattern power pump, built for heavy duty such as is required on pipe line work. The power end is of cast iron, with bronze and roller bearings for all shafts. The crank shaft is of steel. Connecting rods are marine steel and steel is also used in the gears.

The cross-head is cylindrical in design, with large wearing surfaces.

The fluid end is extra heavy, of cast iron, and is fitted with brass conical valves and seats with ample valve area to permit the pump being run at high speed.

The engine is 43 horsepower, designed for oil country work. It is equipped with a Pierce governor. A natural gas carbureter can also be had as part of the engine equipment.

The unit is mounted on a heavy I-beam iron frame fitted with wide wheels to enable it to travel successfully over soft or rough ground. It is equipped for horses when required and also with suitable draw-bars and connections when drawn by a tractor or truck. Rubber tires can also be had if desired.

More information is available either from the home office or from the Tulsa branch, at 24-26 N. Owasso Street.

Stationary Unit

Wheatley Brothers, 1906-12 Wyandotte Street, Kansas City, Missouri, announce a new Wheatley Stationary pumping unit, known as the 5 by 10 duplex heavy duty pump.

The pump is of the enclosed type. All working parts operate in an oil bath. Timken roller bearings are used throughout. Steel connecting rods, gearing, and crankshaft are standards on the pump. Valves are of bronze.

Hook-up of the pump and motor makes it possible to separate them with a wall, if desired.

New Tubing Protector

SMITH SEPARATOR COMPANY

The Smith Separator Company, Tulsa, has on the market a new Ever Ready Tubing Protector.

This protector functions immediately should an accident happen while the tubing is being run in the well.

SMITH TUBING PROTECTOR

After the operator has run the tubing the desired length, by a quarter turn to the left, the protector is set and engages the casing.

The protector is set and waiting for the accident.

Should the operator then desire to move his tubing up in the casing, he raises it and the protector follows up in the same position. If the tubing is to be lowered, a strain is put on it, it is gradually lifted up and turned toward the right. Then the protector is in the same position as when it entered the well.

After the protector is set there is a longitudinal movement through the protector of the tubing on the standard of about five inches. This distance can be increased if the operator so desires.

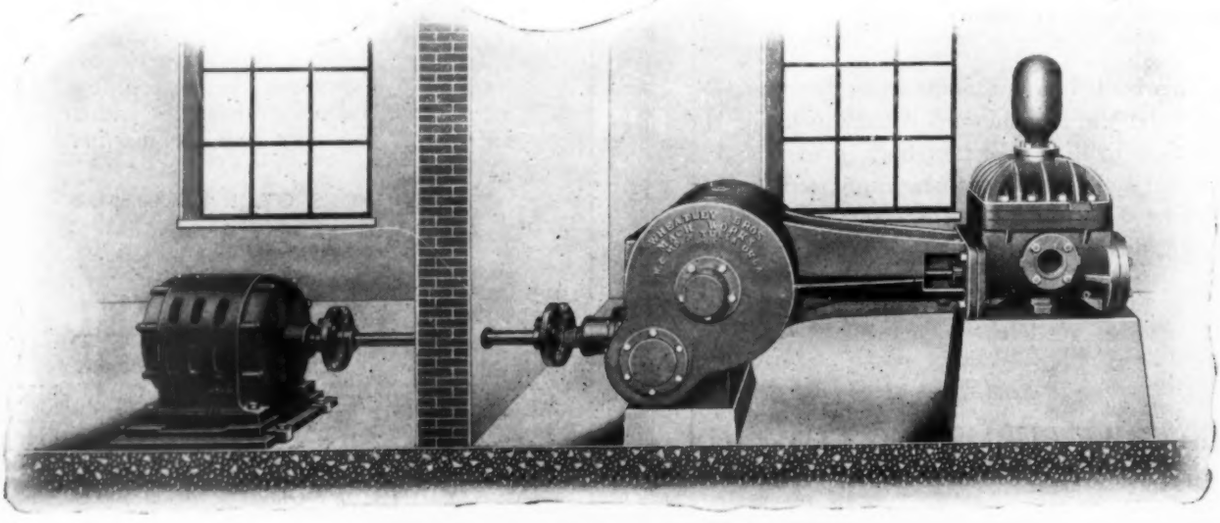
In a well where there is considerable salt or gyp formations that might gather on the inside of the casing the longitudinal movement of the tubing through the protector functions the same as a small set of jars.

The elimination of the anchor and the holding of the tubing in one position eliminates the horizontal movement.

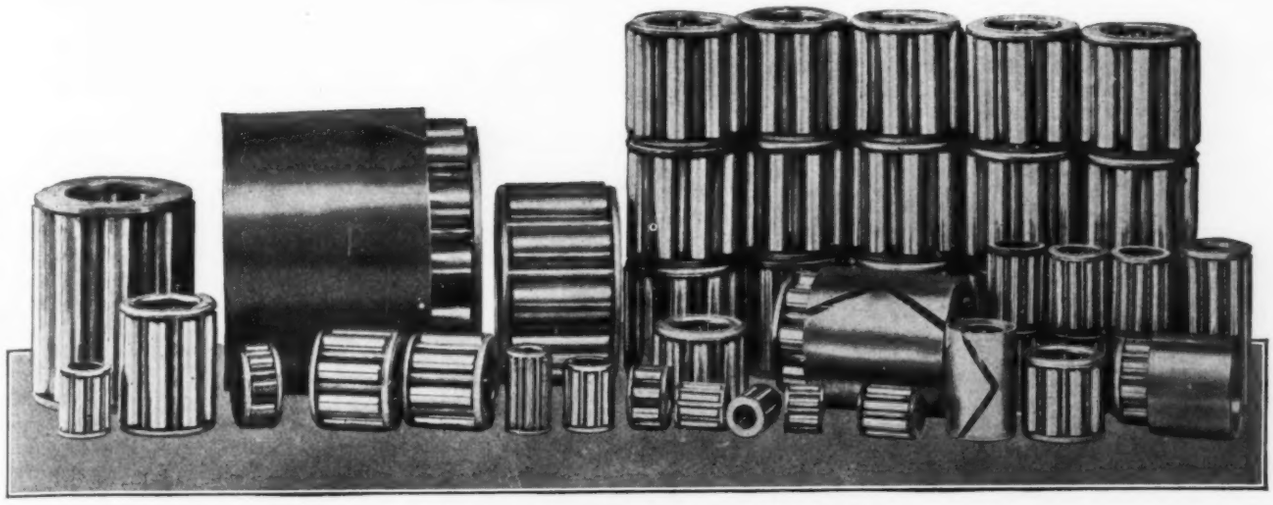
One size protector will run in any weight casing.

The protector is threaded for either standard or upset tubing.

Additional information will gladly be furnished by the Smith Separator Company upon request.



WHEATLEY STATIONARY PUMPING OUTFIT



Typical Group of Rollway Wide Series and Utility Bearings

ROLLWAY CYLINDRICAL ROLLER BEARINGS

for Heavy Industrial Service

For more than 18 years the Rollway organization has specialized in the design, manufacture and application of Cylindrical Roller Bearings to railway and heavy industrial service. The principal classes of bearings which we are now making are listed below:

Maximum Type Radial Bearings — Sixteen types of Heavy-Duty Precision Bearings in sizes interchangeable with annular ball bearings or with metric sizes of roller bearings. ***Catalog 3-A***

Roller Thrust Bearings — Six types of Heavy-Duty Bearings, single-acting and double-acting, with and without aligning washers. ***Catalog 3-A***

Crane Hook Thrust Bearings — Large capacity long life hook bearings permit loads to swivel freely under heaviest loads. ***Bulletin No. 51***

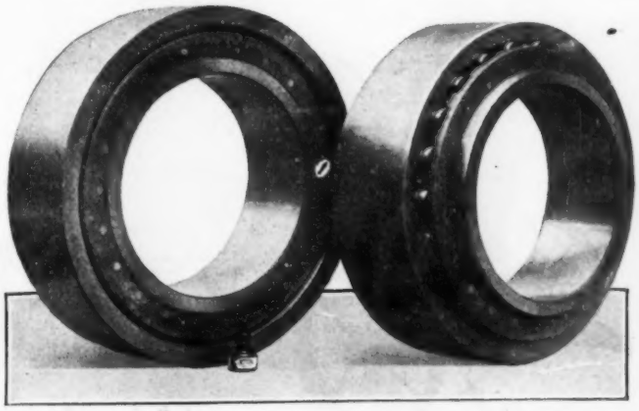
Wide Series and Utility Types — Seven types, with various combinations of inner and outer sleeves. Five of these types designed for rollers operating directly on shaft. ***Catalog 4-A***

Roll Neck Bearings — Large Heavy-Duty Bearings specially designed for steel or brass rolling mills, oil mill crushing rolls, or calendar rolls for rubber mills or paper mills. ***Bulletin No. 52***

Roller Bearing Pillow Blocks — Self-aligning pillow blocks for shafting from $1\frac{3}{16}$" to $8\frac{3}{4}$" diameter. ***Bulletins No. 53 and No. 55***

Maximum Double Width Bearing, Full Roller Type, with Wide Inner Race to Give Ample Seat on Shaft

Single Acting, Flat Washer Type Roller Thrust Bearing

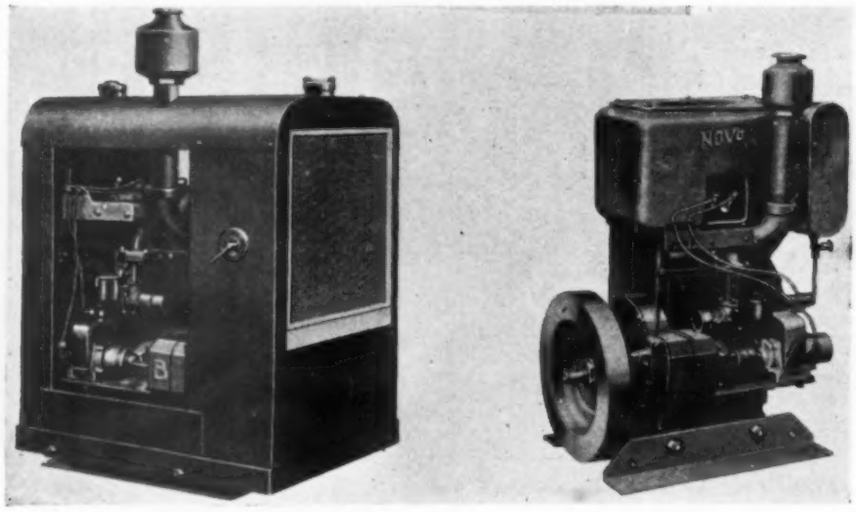


Rollway Bearing for Roll Neck—Estimated Capacity One Million Pounds

Rollway Bearing Co., Inc.

Syracuse **New York**

Say you saw it in The OIL WEEKLY



NEW NOVO ENGINE

Novo Engines and Pumps

NOVO ENGINE COMPANY

Novo Engine Company, Lansing, Michigan, is announcing a new Novo Timken Tapered Roller Bearing Engine, and a new series of Novo "Flud Oild" pressure pumps.

The engine is made in three sizes: UF, six horsepower; RU, nine horsepower; and YU, twelve horsepower.

Features of these engines, according to the company, include a number of points; the engine uses 180 degree opposed throw counterbalanced crankshafts, said to insure a smooth flow of power without vibration. Both crankshaft and driveshaft bearings and the main bearings are Timken Tapered Roller bearings.

The engine has independent power take-off shafts. It also has four speeds and has right or left hand direction of rotation.

The engine is furnished with the drive on either side. The magneto and carburetor are always away from the machine being operated. An automatic impulse starter is used on the magneto.

Handhole plates are provided. The engine need not be removed from its base to adjust or inspect connecting rods or the oil pump. A positive driven oil pump is part of the equipment.

The engine always cranks right hand.

The engine was designed to operate Novo pumps, hoists, and compressors,

Type "NT" Triplex Single Acting

This pump is a high pressure, three cylinder, single acting plunger pump, automatically lubricated. It is built in three types; gasoline, electric or belt drive.

The pump was designed for high speed operation. The crankshaft has been increased to make this possible. Valves, similarly are larger in proportion to size of plunger.

Speed is 200 strokes per minute.

The pump is completely enclosed and automatically lubricated. The pump pinion shaft runs in bronze bushings which are ring oiled. The crankshaft runs in split babitted bearings. Every moving part is flooded with oil

The outfit is especially adapted to service on isolated locations.

Type "EW" Duplex, Double Acting Piston Pump

These units are built in several sizes with capacities of from 35 to 110 gallons per minute. Gasoline driven units are regularly furnished mounted on welded steel trucks. Electric or belt driven units are regularly furnished on skids, although they will be mounted on welded steel trucks when so ordered at extra cost.

This style pump will operate at various pressures up to 425 pounds, which makes the pump suitable for handling crudes or water as needed. On any job where a dependable supply of water is needed, the pump will be found applicable.

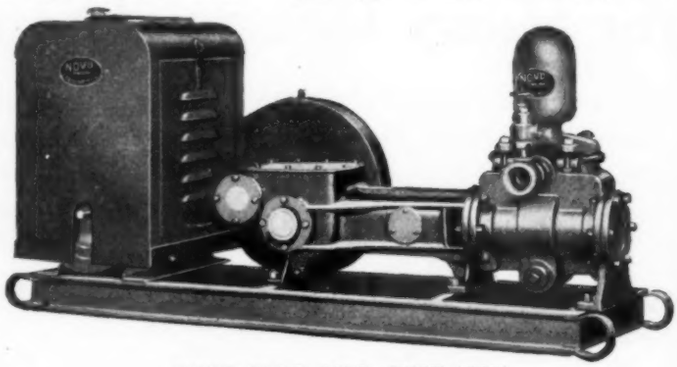
Type "EU" One Cylinder Double Acting Piston Pump

The type "EU" outfit is built in several sizes with capacities ranging from 25 to 55 gallons per minute; pressures range from 100 to 250 pounds per squre inch.

The piston pumps have welded steel frame for truck or skid mounting. Gasoline, electric or belt drive can be furnished.

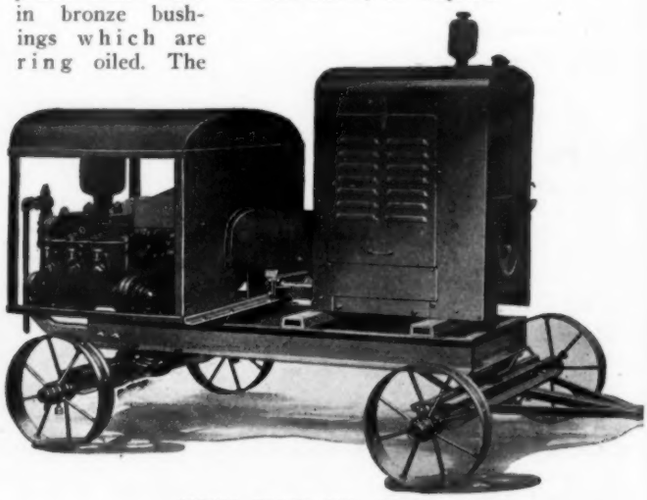
This type is used extensively in oil fields. Because of the proper capacity, they are standard units for supplying water to boilers.

Additional information with construction details will be furnished by the manufacturer, on request.



NOVO FLUD OILD, TYPE "EU"

NOVO FLUD OILD, TYPE "EW"



NOVO FLUD OIL, TYPE "NT"

Crotto Climax Wire Line Clamp

SAVES TIME AND DRILLING LINES

Showing clamp closed, and in position on temper screw

The Clamp With—

Interchangeable, Interlocking Liners.

Tempered Set-Up Screw with Interchangeable, Reversible Set-Up Nut

Weldless, Non-Fouling Links

The Crotto Climax Wire Line Clamp is perfectly balanced, easily hitched on or unhitched, and so designed that positive gripping action can be applied quickly and easily. All friction and wear is reduced to a minimum and all wearing parts are provided with adjustment thus insuring long life.

Three Jaws

This clamp has **three jaws,** one fixed in the housing, the other two being integral with the right and left arms. All liner seats are machined, and in addition there are separate machined grooves (other than the liner seats) for gripping sand lines.

Three Interchangeable, Interlocking, Heat Treated Liners

Three interchangeable, interlocking, heat treated liners entirely encircle the wire line, gripping it firmly and uniformly, and eliminate all danger of displacing a high strand in the line when "slipping" is practised, thus protecting both the strands and the core of the wire line.

These liners have funnel shaped tops and are drop forged with projecting working faces which permit of more abrasive metal, thereby insuring longer life.

Liners

Top view of liners

Easy Closing Compression

The liners automatically adapt themselves to a perfect contact on the drilling line, and it is impossible to pinch, wedge or flatten it.

Note the complete encircling of the line in the accompanying illustration.

Weldless Non-Fouling Links

The Crotto Climax Wire Line Clamp is regularly equipped with the well known "Goggle" Weldless Non-Foul Links which can be readily removed if necessary and which positively will not foul.

This clamp can be minutely controlled and has no delicate, complicated parts to get out of order. It is heavy enough for the deepest wells, yet light enough for drilling machines, and will withstand any service to which it is subjected.

Price complete with 1 set of liners for ¾" or ⅞" or 1" wire line $95.00
Weight, 190 lbs.

Get One at Your Supply Store

Illustrated Folder Fully Describing this Clamp Sent Promptly on Request

Manufactured By

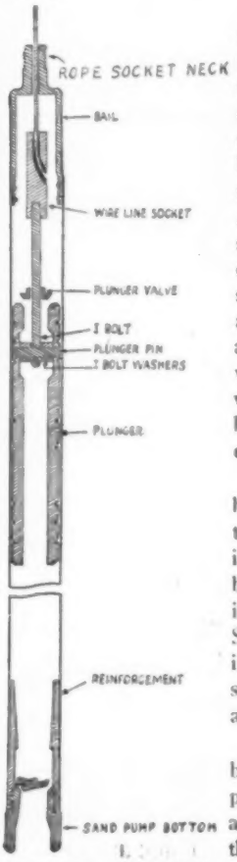
WESTERN SUPPLY COMPANY

424 North Boulder **Tulsa, Oklahoma**

Bailer and Sand Pump

MILLER COMBINATION BAILER & PUMP COMPANY

Miller Combination Bailer & Pump Company, Sapulpa, Oklahoma, is manufacturing and putting on the market the Miller Combination Bailer and Sand Pump.



MILLER COMBINATION BAILER AND SAND PUMP

In this outfit the sand line runs through the bail which is made with or without rope socket neck, and is babbitted to the sand line socket. An eye bolt rod is screwed into the other end of the sand line socket and is fastened to a hollow plunger with a seated valve working on the rod between the plunger and socket.

There are four bottoms: Dart bottom used in drilling, sand pump bottom for cleaning out, Chisel and Star bottoms used in loosening up sand where tools are not used.

In operation the bailer and sand pump works about as follows: When the bailer is lowered to the bottom of the well it is resting on the sand line socket, the sand line is slackened and the plunger sinks to the bottom of the bailer. When the sand line is started upward the valve seats on top of the plunger, the plunger being two thirty-seconds of an inch smaller than the tube. The eight water courses cut around the plunger causes the water to fill above the plunger, creating a suction which fills the bailer from the bottom with slush, mud and sand.

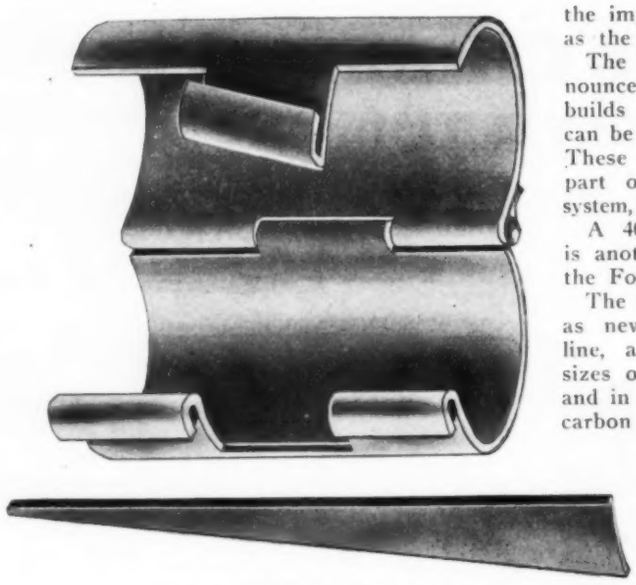
In dumping water to drill or clean out, the bailer is lowered to the bottom of the well, the sand line is slackened until the plunger reaches the bottom and when the plunger is pulled up, the water is thrown over the top, which washes down the sand, making a complete switch.

Leak Stopping Device

The Miller Combination Bailer and Pump Company, Sapulpa, Oklahoma, offers to the trade a new leak stopping device.

The device is hinged. An old inner tube can be used for a gasket. The apparatus can be made in any size or length.

Further information will be supplied by the company, on request.



MILLER LEAK STOPPING DEVICE

Fomon Generators

AMERICAN FOMON COMPANY

The American Fomon Company, Drexel Building, Philadelphia, Pennsylvania, announces improvements in the Fomon Generators which give much extra capacity to the units, thereby reducing the number of units necessary to give the desired rate of foam application.

The model "B" unit has a form capacity of nearly double the standard unit, and at the same time maintains the same general characteristics. The hopper is the same size as that used on the standard unit, and construction is such that interchangeability is possible.

Portability is a feature of the improved outfit, as well as the older models.

The Fomon Company announces also that it now builds custom units which can be adapted to any plant. These may be used as a part of a stationary foam system, mounted on trucks, etc.

A 40-gallon foam engine is another standard item of the Fomon line.

The company also offers as new additions to their line, a complete range of sizes of foam extinguishers, and in the allied Fofire line, carbon tetrachloride and soda and acid extinguishers for non-foam protection.

More information on all Fomon devices will be mailed on request to the company.

FOMON GENERATOR IN ACTION

Two-Part Speed Flange

RHODE ISLAND FITTINGS COMPANY

The Rhode Island Fittings Company, 123 Georgia Avenue, Providence, Rhode Island, has on the market a new two-part speed flange union.

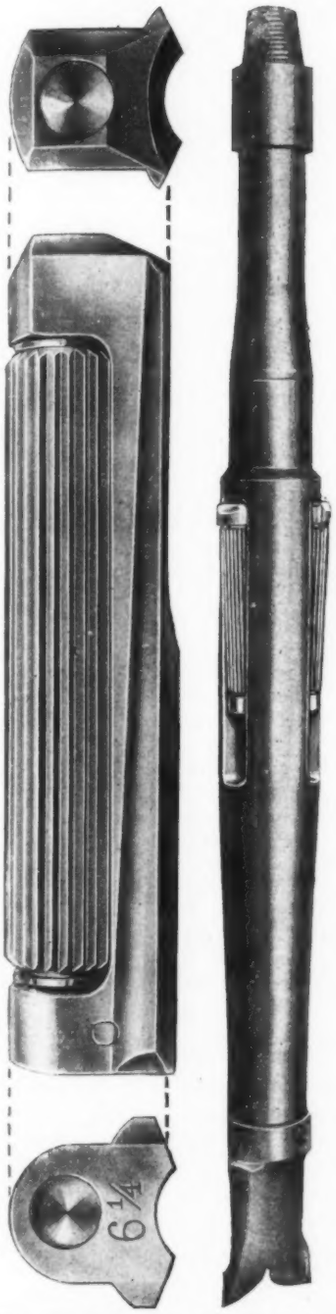
On this new union, the nuts are raised so that the ordinary end wrench can take three-fourths of a turn. Movement of the wrench is not restricted by the union itself, only by the pipe. The bottom nuts can be tightened without scooping a hole beneath the flange.

More specific information will be mailed on request to the company.

RHODE ISLAND TWO-PART SPEED FLANGE

Save this issue. It is valuable and you will have several occasions to refer to it during the coming year.

"UNDERREAMER HEADQUARTERS"



This new Type "C" GRANT Underreamer has remarkable underreaming qualities and is very economical to operate. Nothing to build up or repair. Only cutters contact the formation. Cutters cannot be lost. Write for details.

Rome wasn't built in a day —neither are underreamer reputations!

ONLY time and actual field performance can prove or disapprove the merit of an underreamer. Yet, several recently introduced underreamers are having claims of the most extravagant nature made for them by their manufacturers. As to the GRANT Underreamer—the original—it has long since proven the excellence of its performance to the complete satisfaction of hundreds of operators, over a period of years. For your own protection, investigate the GRANT Underreamer before you invest in any underreamer.

The GRANT has many exclusive advantages

The GRANT has fewer parts than any other underreamer; it is safer to run than fishtail reaming bit as it has no wedging action; it is easier on drill pipe as it takes about the same weight as when drilling (cutting a good wide shoulder) and it is impossible for the cutters to drop out. Every part is forged from steel billets and machined.

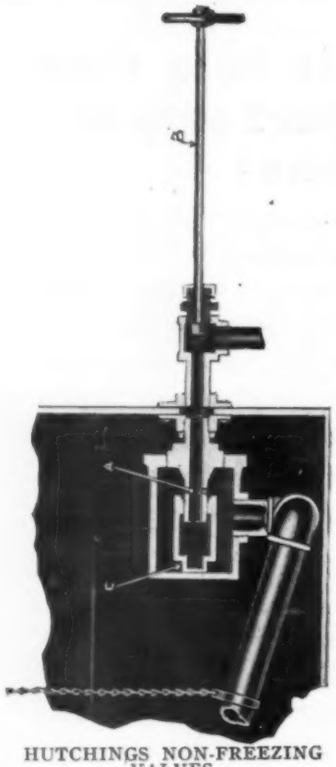
Any style of cutters you desire

GRANT Underreamers are not limited to any particular style of cutters. They are naturally designed to secure the fullest factor of safety. However, where an operator desires more cutting edge, etc., a GRANT can be furnished to meet his individual requirements.

Send for complete details TODAY

GRANT OIL TOOL COMPANY
Manufacturers of Oil Well Specialties
2042-44 East Vernon Avenue
LOS ANGELES, CALIFORNIA

GRANT
ROTARY UNDERREAMER



HUTCHINGS NON-FREEZING VALVES

WESTCOTT PIPE LINE VALVE

Continental Products

CONTINENTAL SUPPLY COMPANY

The Continental Supply Company is distributing several new products of interest to oil producers.

Westcott Pipe Line Valve

The new Westcott pipe line valves are made in 18 and 20-inch sizes. These valves have four-inch by-pass.

Non-Freezing Valve

A tank valve said to be non-freezing is another new Westcott product. The valve was patented by J. L. Hutchings.

The opening and closing mechanism of the Hutchings valve is inside the tank. When the valve is in closed position, the liquid inside the line and spout drains out so that the portion of the valve inside the tank is empty and cannot freeze. The valve proper is immersed in the fluid inside the tank.

When the valve is closed, the portion outside the tank may be accidentally knocked off without in any way affecting the tightness and efficiency of the valve proper.

GODALL SEMI-METALLIC HOSE

New Rotary Hose

The Continental Supply Company announces the distribution of a new manifold hose manufactured by the Godall Semi-Metallic Hose and Manufacturing Company. This hose provides a flexible connection to be used by rotary drillers between standpipe and pumps.

The hose is built to withstand high pressures. It is equipped with flexible ball joints designed so that the hose cannot be kinked, nor have internal clearance interfered with by bending.

Additional information may be secured from any branch of the Continental Supply Company,

Bull Dog Sucker Rod

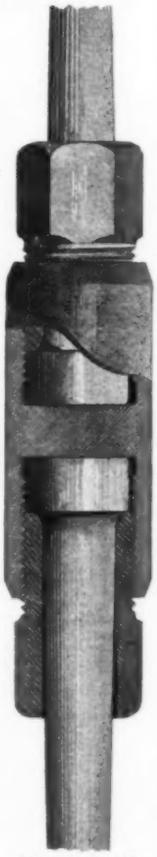
COLUMBUS SUCKER ROD COMPANY

The Columbus Sucker Rod Company, Columbus, Ohio, announces a new type of sucker rod to be called the Bull Dog. The rod was designed primarily for deep well pumping.

Alloy steel is used in the rods. No machining is done on the rods.

Couplings are of alloy steel and of a larger diameter than the rest of the rod. The same material is used in the sleeve glands. The glands are machined and threaded to insure perfect fit and easy assembly. Both couplings and glands are heat-treated.

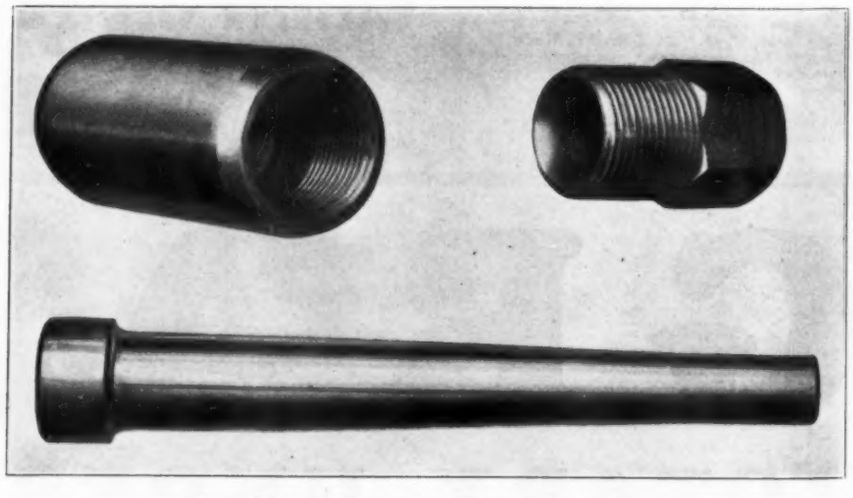
Bull Dog rods are being made in two sizes: the five-eighths and the three-quarter-inch size. All rods are in 25-foot lengths. Special couplings are furnished for those wells which have a different size top and bottom connection. The company recommends the one and one-fourth-inch polished rod with one and one-fourth inch thread.



BULL DOG SUCKER ROD

More information can be had from the company, on request.

Save this issue. It is valuable and you will have several occasions to refer to it during the coming year.



BULL DOG SUCKER ROD SHOWING ASSEMBLY

HERCULES TOOLS

Afford *real* protection

The four Hercules Tools described on this page should form a part of the lease equipment of every producing company interested in greater economy, absolute tubing protection, safety and maximum operating efficiency. NOW before the accident, is the time for protection—

later may be too LATE

Tubing Spider

The Hercules Spider is automatic and does not wholly depend on someone to operate. Running or pulling tubing it acts as a safety device, automatically allowing slips to fall back into position, catching the tubing.

Tubing Hanger

Supports tubing at the casinghead. It has adjustable packing features, absolutely gas tight and will hold any pressure where gas or air is used to flow well.

Tubing Anchor

Placed on the tubing near the bottom of the casing. Prevents tubing from dropping should an accident occur, as the slips are always engaged.

Tubing Rotator

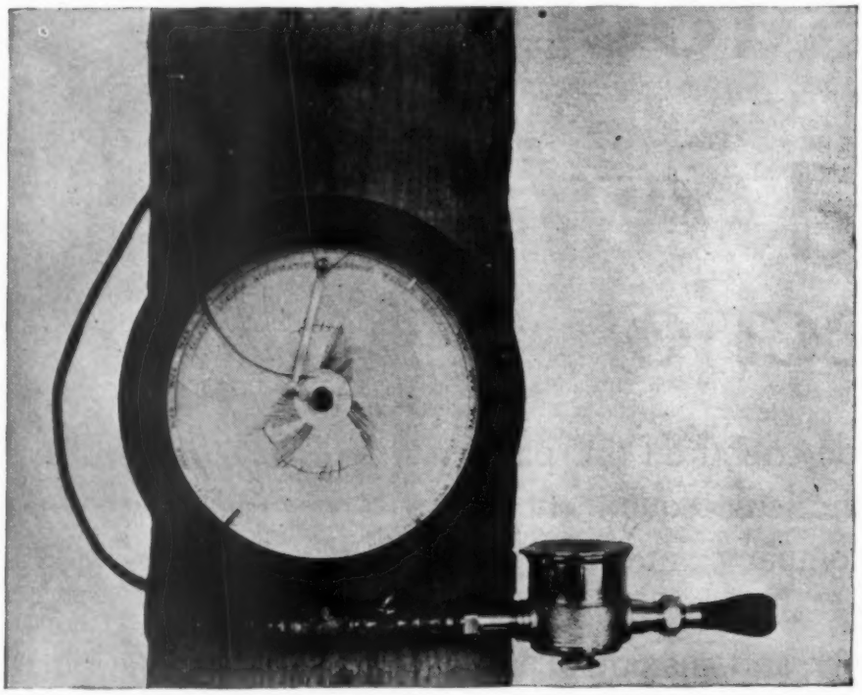
Allows the tubing in rotary holes to be rotated each day, without disconnecting pumping equipment, eliminating rods cutting tubing with constant replacement and shutdown losses.

For sale by all leading supply stores. Write for fully descriptive folders, prices, etc. Just check below, items desired, tear out and mail NOW.

HERCULES TOOL TULSA

Hercules Tool Company
507-8 Bliss Building
Phone 3-2358 Tulsa, Oklahoma P.O. Box 286

Gentlemen - Send me information prices etc. on the following:
☐ Spider ☐ Anchor ☐ Hanger ☐ Rotator
Name _____



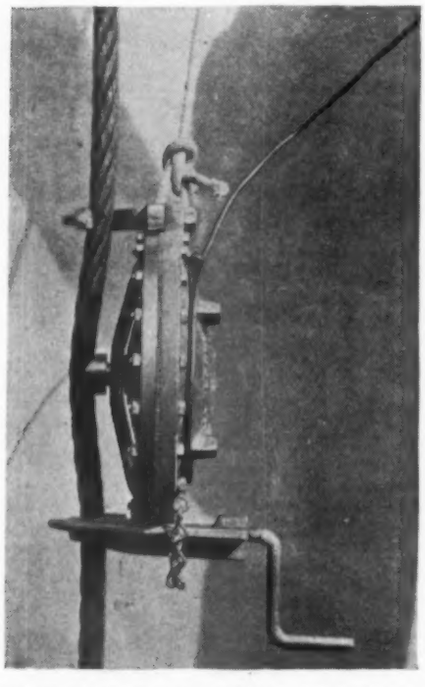
RECORDING APPARATUS OF MARTIN-LOOMIS WEIGHT INDICATOR

Improvement Made in Weight Indicator

MARTIN-LOOMIS CORPORATION

The Martin-Loomis Corporation, 568 Willow Street, Long Beach, California, announces improvements in the Martin-Loomis Weight Indicator.

The Weight Indicator, which in operation, discloses to the driller and others interested, the weight of the tools, drill pipe, etc., pulling on the hook, such weight being indicated on both the gauge and the chart on the clockwork recording instrument, at all times, has been improved during recent months through a specially designed quick take-off feature being incorporated in its make-up. Formerly the instrument was attached to the dead line by means of a "U" bolt device, which required about one minute for the removal of the indicator from the line. In some fields, particularly Ventura Avenue, where the gas pressure is high, it was found that the device should be designed so that when it was desirable to reel in the dead line, it could be instantly removed to prevent its being wound around on the calf wheel. Therefore the inventors designed the new quick removable feature, as is illustrated in the accompanying photographs. This is a "C" clamp arrangement which enables the operators on the derrick floor to remove the instrument from the dead line in just one turn of the protruding handle. Through this improvement the weight indicator can be removed or placed again in service in about three seconds.



MARTIN-LOOMIS WEIGHT INDICATOR ATTACHED TO DRILLING LINE

The Loomis Company is now assembling a precision instrument built along lines quite similar to the large weight indicator, which is finding a ready market for such purposes as checking the tension of electric light lines, telephone messenger lines, cables, guy lines and in fact in all instances where cable tension needs be carefully regulated.

This tension indicator can be applied at any time during the stringing of a messenger. When proper tension is obtained, as indicated by gauge, the line may be tied and all guess work eliminated. The indicator is constructed for use on any type of cable from one-fourth-inch to one and one-fourth inches diameter. It is light and compact, easy to attach and release.

More details will be supplied by the company.

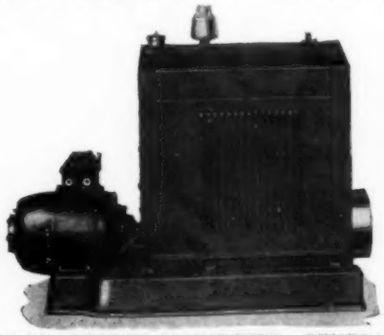
Moon Lighting Plants

MOON MANUFACTURING COMPANY

The new lighting plants for the oil country have recently been placed on the market by the Moon Manufacturing Company, of Chicago. These new plants are known as the Moon Gas-Electric Lighting Plants, and have been built in two types, the direct-connected and the belt-driven.

Direct Connected

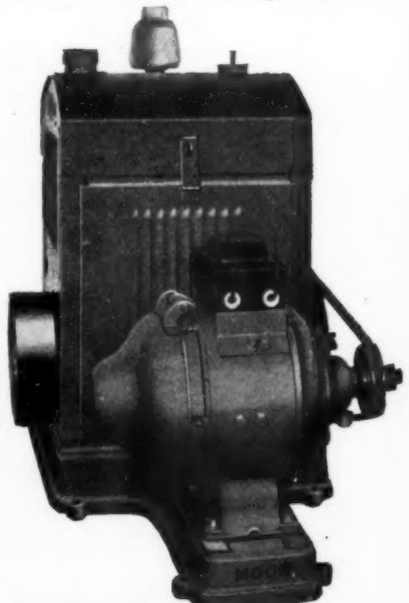
The direct-connected lighting plants consist of a Moon generator, direct-connected to a heavy-duty gasoline engine, all mounted on one base and equipped with heavy timber skids. An auxiliary pulley is included as standard equipment, by means of which other apparatus such as blowers, pumps, etc., can be operated by belt.



MOON DIRECT-CONNECTED GENERATING PLANT

By means of a specially designed clutch coupling, the generator can be disconnected from the engine when light is not required and then the entire capacity of the engine is available for other purposes.

Both plants are full ball-bearing, fully enclosed with steel housing, made in capacities of one and one-half, two and one-fourth, three and four K.W.

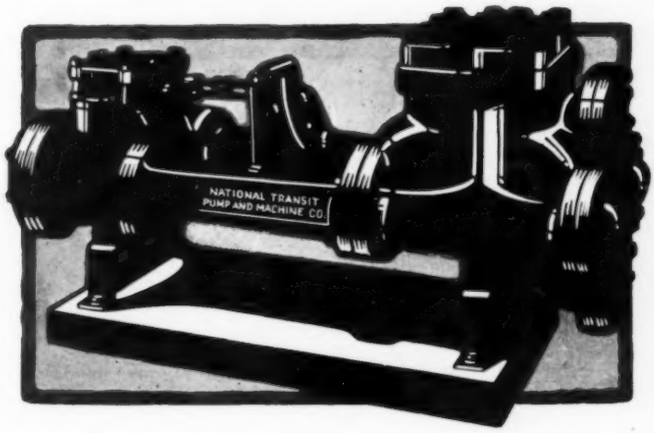


MOON BELT-DRIVEN GENERATING PLANT

Belt-Driven

The belt driven plant is similar to the direct connected in every other feature except the drive. A specially designed "V" type, weather-proof belt is used.

An Answernaire



on

TRANSIT PUMPS

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Pump & Machine Company
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Makes Them

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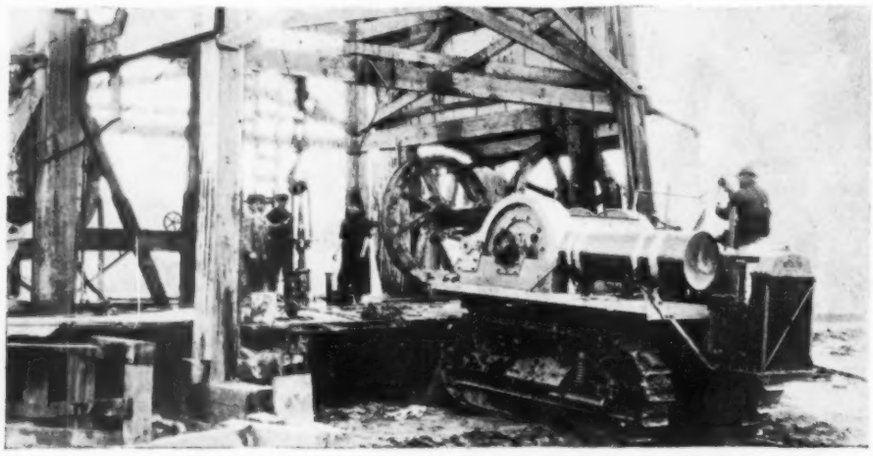
Tulsa, Okla.
Stores Everywhere
West of the Mississippi

Sells Them

ASSOCIATED SUPPLY CO.
San Francisco, Calif.
All over California

Sells Them

Say you saw it in The OIL WEEKLY



HOPPER HEAVY-DUTY HOIST FOR USE WITH CATERPILLARS

New Tractor Devices

CATERPILLAR TRACTOR COMPANY

The Caterpillar Tractor Company, San Leandro, California, announces a number of developments in hoists and winches for use with Caterpillar tractors. Specifications for these items are listed below:

Hopper Heavy Duty Hoist

C Type for "Caterpillar" 60.

Driven from transmission, three speeds forward and one reverse.

Line capacity: 7,000 feet, three-fourths-inch cable.

Speed: High, 75 r.p.m.; intermediate, 52 r.p.m.; low, 18 r.p.m.; reverse, 51 r.p.m.

Line travel: high, 259 feet at the bottom of the drum, 666 feet at the top; intermediate, 181 feet at the bottom of the drum, 468 at the top; low, 67 feet at the bottom of the drum, 156 at the top; reverse, 178 feet at the bottom of the drum, 459 at the top.

Pull: 40,000 pounds, three lines. Releases: Quick release allowing drum to spin by its own weight. Controls: Gear shift, throttle and brake in easy reach of operator. Drum: In two divisions with split divider flange in the center for storing excess sand line. Brakes: One hand, one foot brake; special spring release allowing free action of drum. Weight: tractor and hoist, 26,000 pounds.

Hopper Hoist for "Caterpillar" 30

Driven by special transmission, three speeds forward and one reverse.

Line capacity: 1900 feet with three-quarter inch line, or 3,000 feet with five-eighths cable.

Speed: 75 r.p.m.; intermediate, 50 r.p.m.; low, 20 r.p.m.; reverse, 45 r.p.m.

Line travel: High, 225 feet at the bottom of the drum, 400 feet at the top of the drum; intermediate, 150 feet at the bottom of the drum, 300 feet at the top; low, 60 feet at the bottom of the drum, 120 feet at the top; reverse, 140 feet at the bottom of the drum, and 290 feet at the top.

Pull: 20,000 pounds, two lines. Releases: Instant release allowing drum to spin by weight of line. Controls: All within easy reach of operator. Drum: In two divisions with split divider flange in center for storage of sand line. Brakes: Hand and foot; with special spring release allowing free action of drum. Weight: Tractor and hoist, 15,100 pounds.

Williamette Hoist for "Caterpillar" 30

Capacity: Main drum, 635 feet with five-eighths inch rope; auxiliary drum, 1300 feet with three-eighths inch rope.

Pull at 85 per cent efficiency: Main drum, low, 9987 pounds average; high, 6242 pounds average; auxiliary drum, low, 4873 pounds average; high, 3045 pounds average.

Speed at 850 r.p.m. motor: Main drum, low, 129 feet per minute average; high, 206 feet per minute average; auxiliary drum, low, 272 feet per minute average; high, 435 feet per minute average.

Gypsy head line speeds, low 46 feet per minute; high 74 feet per minute.

Williamette Double Drum for "Caterpillar" 60

Capacity, main drum, 1400 feet with five-eights-inch line; haulback drum holds 2200 feet of three-eighths line.

Speed at 650 r.p.m.: Haul in line, low, 196 feet per minute average; high, 567 feet per minute average; haul back line, 528 feet per minute average.

Pulls: Main drum, low 23,500 pounds; high, 9250 pounds; haulback drum, 8500 pounds.

The outfit operates from power take-off through machined bevel gear operating in oil. Operates entirely from the driver's seat.

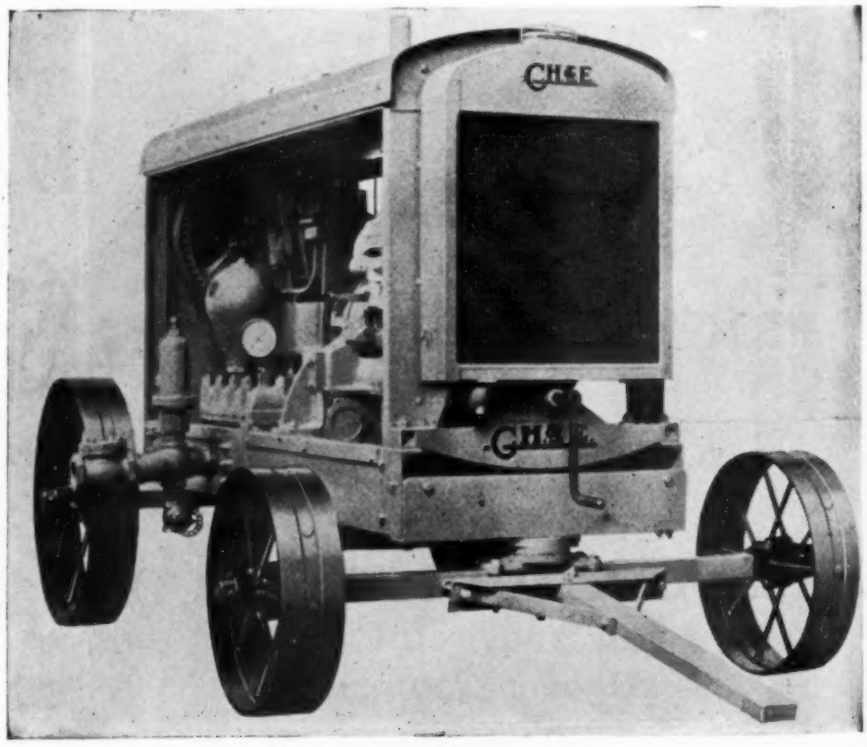
More details on all of these devices will be supplied by the company.

Heavy Duty Pump

C. H. & E. MANUFACTURING COMPANY

An improved Triplex Pump manufactured by the C. H. and E. Manufacturing Company, Clinton, and Mineral Street, Milwaukee, Misconsin, is among the latest pumping equipment to be put on the market.

The outfit is equipped with a Waukesha four-cylinder gasoline engine, mounted. It is a large, slow-speed, heavy duty outfit, strictly outside plunger packed. Stuffing boxes for each plunger have six square graphited flax packing rings drawn down by a gland of ample proportions. The glands, as well as the studs and nuts for drawing down these glands are easily accessible from the outside without

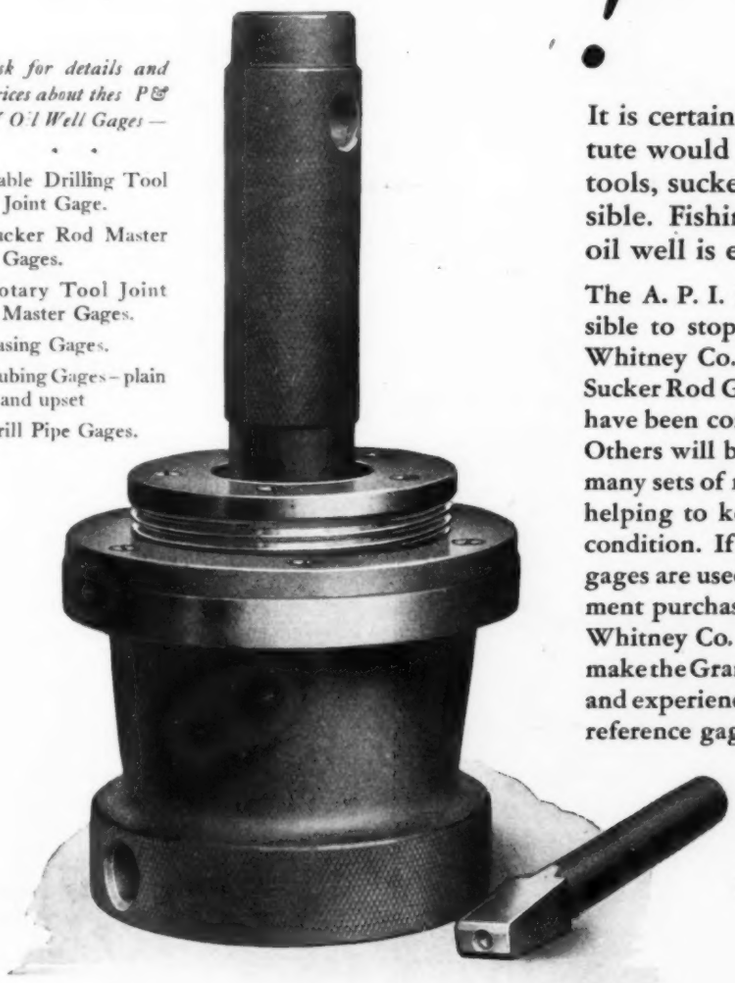


C. H. & E. HEAVY-DUTY PUMP

If the A. P. I. were SHERIFF!

Ask for details and prices about thes P & W O'l Well Gages —

- Cable Drilling Tool Joint Gage.
- Sucker Rod Master Gages.
- Rotary Tool Joint Master Gages.
- Casing Gages.
- Tubing Gages—plain and upset
- Drill Pipe Gages.



It is certain that the American Petroleum Institute would like to prohibit fishing for broken tools, sucker rods, drill pipe, etc., if it were possible. Fishing for such articles dropped in an oil well is expensive—a terrible waste of time.

The A. P. I. is doing about all that is humanly possible to stop such fishing. They have had Pratt & Whitney Co. make Grand Master Cable Joint Gages, Sucker Rod Gages and Rotary Tool Joint Gages, which have been conveniently located for oil operators use. Others will be made later. Pratt & Whitney has made many sets of reference gages that are now in daily use helping to keep drilling equipment in good working condition. If you manufacture equipment where such gages are used, or if you could use them to check equipment purchased or repaired, get in touch with Pratt & Whitney Co. The A.P.I. selected Pratt & Whitney to make the Grand Master Gages because of our equipment and experience in making fine measurements. Buy your reference gages where the Grand Masters were made.

PRATT & WHITNEY CO.
Hartford, Connecticut
Division NILES-BEMENT-POND COMPANY

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DETROIT

removing any parts. They are located between the cylinder and the plunger guides. Plungers are guided by large crossheads. These guides or crossheads are bored and do not come in contact with the water.

A capacity of 80 gallons per minute under 500 pounds pressure is assured for the pump.

The plungers are outside packed with braided flax packing and the packing glands are cupped to retain lubricating oil.

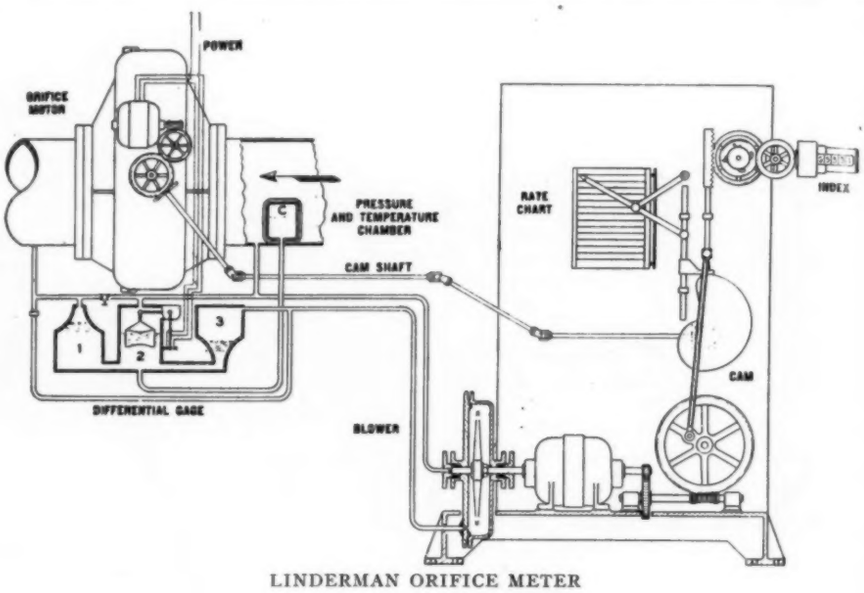
All gears are machine cut stub tooth gears. The outfit has a large crank shaft that runs in long babbitted boxes.

A clutch for easy starting is mounted. The engine and pump are direct connected through a spring coupling. The gear reduction is bolted to the clutch housing.

Power is transmitted through gears running in oil mounted on ball bearing shafts to the spring coupling. This spring coupling is said to take care of any misalignment between the engine and the pump.

The pump can be securely closed by one rod being pushed through the four steel doors and held in position by a strong lock.

The house is built of heavy gauge sheet steel and is protected by two coats of gray paint.



LINDERMAN ORIFICE METER

Automatic Spooler

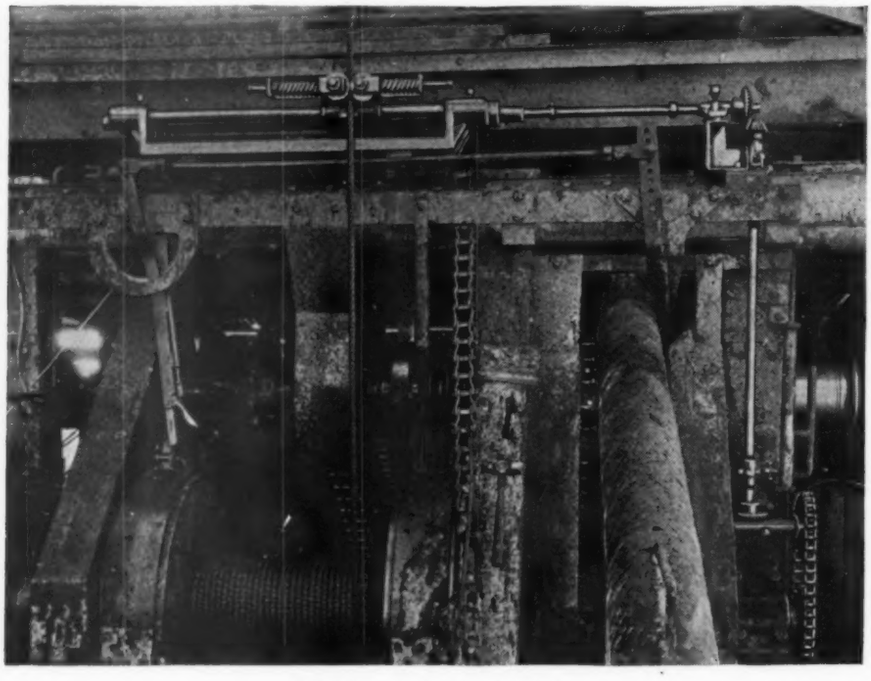
A. J. GRAHAM AND L. O. TEKELL

An automaitc line spooler has been introduced to the oil trade on the Pacific coast, by A. J. Graham and L. O. Tekell, of Los Angeles, California.

This device has for its purpose that of preserving wire line. Instead of being a stabilizer, however, it is said that the new spooler is positive. The appratus is geared and timed to traverse the entire length of the drum on which the line is being spooled, being timed in proportion to the diameter of the line and to the length of the drum. It is so constructed that it may be set with any desired tension against the line.

Compensation for increased or decreased diameter of the drum as the line is being spooled or let out, is made by the use of a sliding or compensating head. The compensating head is attached to the guide head which holds the line in time. Through use of a coil spring under tension, the head slides out or in to conform to the increasing or decreasing diameter of the drum.

Timing of the spooler is brought about by the passage of the guide head which holds the line back and forth on a reversible worm shaft or screw. This shaft or screw is operated by timing gears connected with the drum shaft itself.



GRAKELL LINE SPOOLER

The Grakell spooler, as the outfit is called, weighs about 175 pounds and can be installed by two men in about an hour and a half. In installing the outfit it is not necessary to remove any of the standard rig equipment.

The base of the spooler is made of 10-inch channel iron 52 inches long. On top of this is mounted a two and one-half inch cold rolled steel shaft with right and left reversible groove. On the shaft is the compensating guide head, the principal part of which is cast iron. On the guide head is mounted a one-half by six by twelve inch steel sliding head with sheaves attached.

There is also a one-seventh by 16 by 32 inch cold rolled shaft and a one-seventh by 16 by 62 inch shaft. There are two pairs of semi-steel bevelled gears three and one-half by seven inches, and one seven-sixteenths by 10 inch shaft, also of cold rolled steel. Then there are two 12-inch cast iron sprocket wheels and a 36-inch one and one-fourth inch chain belt.

Lubrication on the Grakell spooler is obtained by using No. 3 cup grease with Alemite system.

All bearings are babbited.

Further information can be obtained from either of the inventors of the spooler at their office at 733 Pasadena Street, Whittier, California.

New Orifice Gas Meter

METRIC METAL WORKS

The Linderman Orifice Meter made by the Metric Metal Works, Erie, Pennsylvania, is introduced as a practical meter adapted to the measurement of gas in large volumes.

In the Linderman Orifice Meter, the aperture is automatically varied from zero to two-thirds of the diameter of the pipe line. The differential pressure is maintained substantially constant and measurement is determined by the size of the aperture. The differential pressure changes slightly to compensate for variations of specific gravity, temperature and pressure without the

Baldwin Precision Oil Well Chains

"Accurate to the thousandth of an inch

BALDWIN 1030S and 1240

Heavy Duty Oil Well Chains—Pins and Bushings case hardened and ground to exact size."

"Performance counts—Baldwin oil well chains are actually giving satisfaction to the driller under most severe conditions. Others are pleased, why not you?"

Ask for Bulletin No. 32 A.

Our Engineers will gladly assist with your problem.

A customer having a set of these chains in use more than eight months, *running continuously night and day,* says:

"If they are worn anywhere, we cannot find it."

These Chains Will Last Longer

BALDWIN CHAIN & MFG. CO.
WORCESTER, MASS.

Originators of Precision Oil Well Chains
In Stock at Leading Supply Houses

DISTRIBUTORS:

George J. Fix Company, 2507 Commerce St., Dallas, Texas. Los Angeles, Cal., The Adam-Hill Co., 637 So. San Pedro St. San Francisco, Cal., The Adam-Hill Co., 96 Ninth St. Lucey Products Corp. of Tulsa, Healdton and Tonkawa. International Supply Co. at Okmulgee, Wewoka and Stroud. T. T. Word Supply Company, Houston, Beaumont, Texas, Shreveport, La., and El Dorado, Ark.

Export Department

Lucey Products Corp., 3505 Woolworth Bldg., New York City.

Say you saw it in The OIL WEEKLY

use of multipliers. The variable orifice will completely close.

A cam is connected to the orifice mechanism by a flexible shaft. For every position of the orifice there is a corresponding position of the cam. A rod is lifted every 20 seconds by an electric motor and returns by gravity until it comes in contact with the surface of the cam. The cam is cut so that the movement which the rod is permitted to make is proportional to the flow through the orifice at that particular opening, and this movement is transmitted to the index by a ratchet.

The differential across the orifice is maintained by a float in one leg of a large U-tube, which operates an arm swinging between two electric contacts. As the differential pressure increases above normal, the float will drop, making contact on the side which operates the motor in such a direction as to open the orifice. This decreases the differential pressure, returning the float to its neutral position, thereby breaking the electric contact on the motor. As the differential pressure decreases, due to a smaller demand for gas, the float rises, making a contact on the opposite side and operating the motor in such a direction as to close the orifice and re-establish the proper differential pressure.

More complete information on the meter will be furnished by the company on request.

Hercules Products

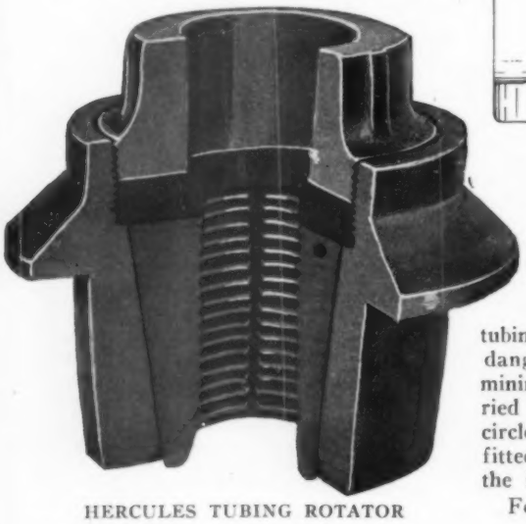
HERCULES TOOL COMPANY

Hercules Tool Company, P. O. Box 286, Tulsa, is marketing two new pieces of equipment which are said to increase pumping efficiency.

Hercules Tubing Rotator

The Hercules tubing rotator was designed for use in crooked rotary holes, especially where rods have a tendency to cut the tubing. The rotator is placed in the casinghead. It consists of an outer bowl inside of which there is a bowl known as the rotary bowl This rests on a ball race, allowing it to turn easily. Three slips are used in the rotary bowl to support the tubing. Just above the rotary bowl a rubber packing ring is used. A packing nut is screwed into the top of the rotator thus compressing the packing ring and packing off around the tubing as in the Hercules tubing hanger.

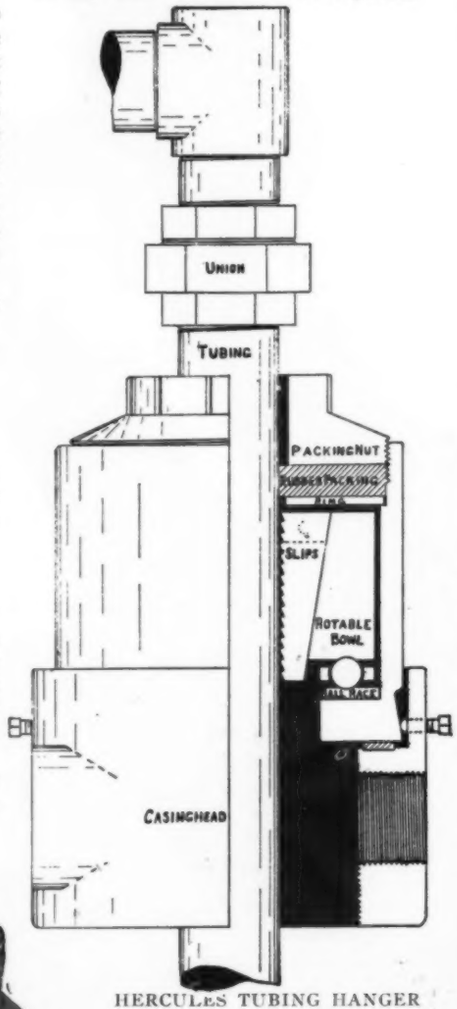
In order to turn the tubing it is only necessary to loosen the packing nut in the rotator and the union below the "T," place a wrench on the tubing and turn it to the next mark on the rotator, then tighten the union and packing nut. This can be done without shutting down the engine or interfering with the pumping operation of the well.



HERCULES TUBING ROTATOR

Hercules Tubing Hanger

The tubing hanger was made to use on flowing or pumping wells and will fit any size or make of casinghead.



HERCULES TUBING HANGER

The bowl of the hanger is flanged and designed to sit down in the casinghead. It is in reality a combination casinghead top and tubing hanger or support. It reduces the danger of the tubing dropping to a minimum, inasmuch as the tubing is carried on three slips which completely encircle it. The slips are machined and fitted so as to insure perfect contact with the inside taper of the hanger body.

Forged steel, light in weight but capable of carrying 150 tons hanging weight, is used in the hanger. The improved slips are designed so that a wire handle can be attached and the hanger used as a spider for running or pulling tubing. The packing is adjustable and the hanger can be repacked without lifting the tubing or interfering with the pumping operation. The packing nut is equipped with ribs which furnish a substantial grip for a pipe wrench.

More information on either item will be supplied by the company, on application.

Delta-Star Substation

DELTA-STAR ELECTRIC COMPANY

A new type of outdoor substation for oil field service is announced by the Delta-Star Electric Company, 2400 Block, Fulton Street, Chicago, Illinois.

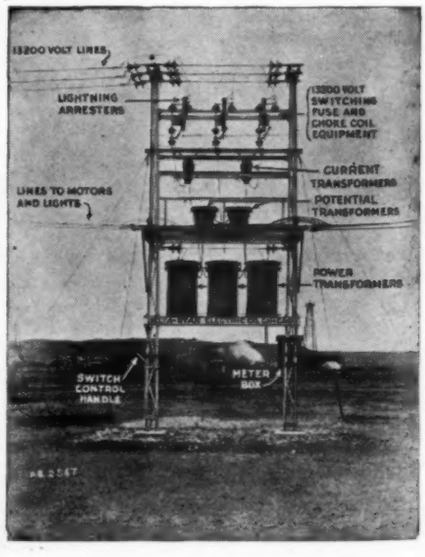
The equipment is built to tap a 13,200 volt transmission line and serves power for drilling or pumping wells.

This outfit makes it possible to bolt the induction motors with wound rotors to the drilling apparatus when used for drilling.

The stations are equipped with three 50 K. V. A. 13,200/440 volt 50 cycle transformers. The 13,200 volt primary switch is opened and closed by means of control handle located near the ground level. Metering is done on the primary side and the recording meter is enclosed in a box for convenient reading.

The structure is completely assembled on the ground and can be raised by means of a gin pole and dropped into foundation holes in five feet of concrete. The pole bases are greased before being dropped into place. In the event it becomes necessary to move the station to a new place, the gin pole is rigged up and the station is pulled up by means of a block and tackle and a motor truck.

Additional data can be secured by corresponding with the company.



DELTA-STAR SUBSTATION

There Are Ten Thousand Chances That You Can Get It at the Hercules Store in Wink

RIGHT in the heart of the Winkler field, in the best and most convenient location in Wink, the Hercules Supply Company has established a complete oil field supply store. This store is twenty miles from the railroad at Pyote, over some of the worst sandy roads in West Texas.

Fully stocked, this store carries for immediate use over ten thousand different items ranging from cotter pins to oil field boilers.

Complete Lucey rigs on the floor. Then there are

American Steel & Wire Co. Wire Lines
"D & B" Sucker Rods, Working Barrels, and Pumping Specialties, Hooks, Sockets, Stuffing Boxes, etc.
American Cordage (Trojan), Bull Ropes, Cat Lines
O. I. W. Cable Tools (Heat treated and guaranteed)
"Yale" Chain Hoists
Worthington Pumps and Machinery
Westinghouse Generators
Burt Swabs
"Hercules Special" Belts, rubber covered and friction surface
Bovaird Spiders and Elevators
Goodrich-Hi-Flex, Commander Belting and Packings
Crane Valves, Fittings and Special Refinery Equipment
Kennedy Valves, Fittings, Fire Hydrants
Powell Valves and Steam Specialties
Hough Pumping Equipment, Steelex, Bronzex Balls and Seats
No-Co-Ro Balls and Seats
Guiberson Tubing Catchers, Swabs, Oil Savers, etc.
O'Bannon Pumping Equipment and Specialties
"Etna" Casing Line Pipe, Tubing (Spang, Chalfant)
Pittsburgh Seamless Tubular Goods
"Hercules" Casing Shoes
Neilson Pumping Specialties
Wilson Tubing Elevators, Tongs, etc.
Dunn Tubing Elevators, Tongs, etc.
Darcova, Lubri, D. & B., etc., Valve Cups
Perfection Core Barrels
Spang Jars
Wilson Rotary and Casing Elevators, Tongs
Dunn Rotary and Casing Elevators, Tongs
Penberthy and Chicago Injectors
Lufkin Tapes and Rules
Fishing Tools, both Rotary and Cable
"Beaver," "Nye" & "Toledo"
Stocks, Dies, Pipe Cutters
Vulcan and Billings Spencer Chain Tongs and Wrenches
Disstons and Atkins—Saws, Hardware.

The same efficient service will be given at Pyote as given at Hercules stores on similar locations, such as Borger and Mildred.

American Wire Lines
Lucey Rotary Products

Etna Tubular Products
Pittsburgh Seamless Tubular Goods

HERCULES SUPPLY CO.

J. T. McCARTHY JR

Everything For Oil Wells

GENERAL OFFICES-DALLAS

BORGER VERNON WORTHAM PYOTE (Wink)

Fairbanks, Morse Products

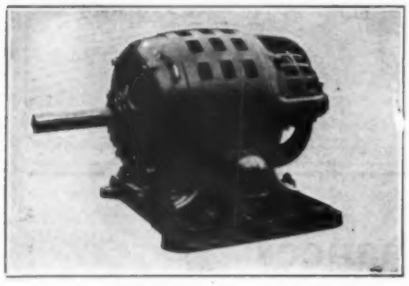
FAIRBANKS, MORSE AND COMPANY

Fairbanks, Morse & Compnay, Chicago, Illinois, have perfected several new Diesel engines and a new motor of special interest to the oil industry. The Diesels are adapted to pipe line pumping and the motor is applicable to field lifting problems.

Diesel Generating Set

The small Diesel generating set is suitable for auxiliary service in pipe line pumping stations. The sets are built for both direct and alternating current and in rating of 20, 30 and 40 kw.

The sets are compact in that the cylinders of the Diesel engine are cast in block and in the case of direct current sets the generator is built in as a part of the engine assembly. Where alternating current sets are supplied, the alternator is mounted on a subbase and connected to the engine by means of a flexible coupling. The exciters of the alternators are direct connected on the smallest size sets.

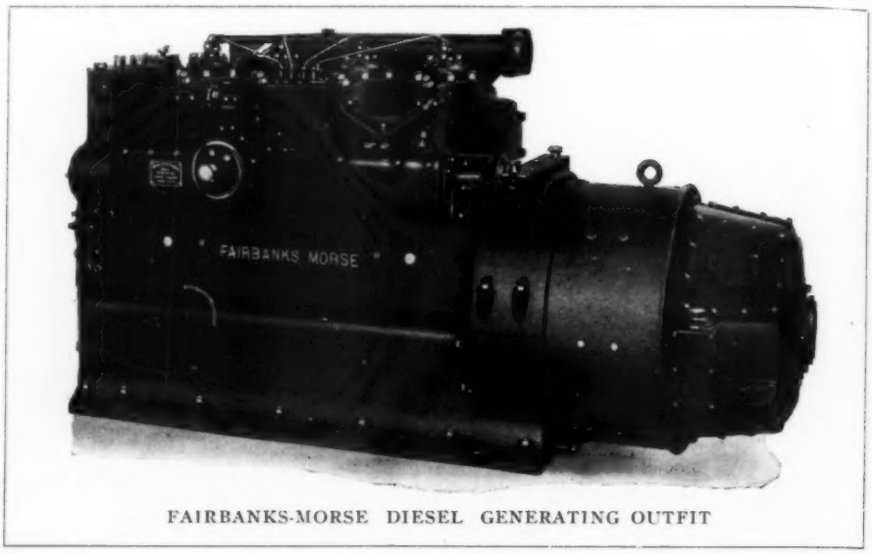


FAIRBANKS-MORSE NEW MOTOR

These engines follow the general design features of the larger line of Fairbanks-Morse Diesel engines in that they are of the two cycle airless injection type. They start with compressed air. They utilize the same grade of fuel oil as used by the largest Diesel engines.

There is one important difference in the fuel injection scheme which is used with this line of engines and that which is used in other Fairbanks-Morse Diesels. The amount of fuel injected is controlled by the length of the injection pump plunger stroke and not by the closing of the suction valves. The suction valves are automatic in their operation, that is, they open and admit fuel to the barrel of the injection pump on the down stroke of the plunger. The stroke of the plunger is regulated through a simple linkage arrangement.

The fuel supplied to the suction valves is under a pressure of five pounds. This is obtained by having the gear pump which supplies the fuel to the auxiliary fuel reservoir on the engine operate against a spring loaded relief valve. In other words, when the fuel pressure builds up to five pounds, the excess fuel which is pumped by the gear pump overflows back to the main supply tank.



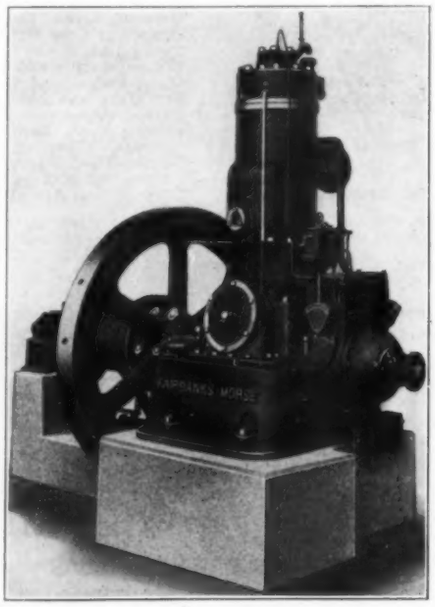
FAIRBANKS-MORSE DIESEL GENERATING OUTFIT

The new Fairbanks-Morse Diesel is equipped with both manual and governor control. In this control a half turn of the small regulator will vary the speed through a wide range. Where the engine is to be operated for long periods at slow speeds the governor control wheel is turned and the engine operates at this slow speed under governor control, that is, the speed will not vary over nor under the speed for which the governor is set.

Diesel Pumping Engine

During the year the Continental Supply Company announced the modification of the 40 and 60 horsepower Fairbanks-Morse Vertical Diesel engines to adapt them for pumping individual wells on the beam and wells collectively on powers.

Formerly the Continental Supply Company had been offering the 25 hp. horizontal oil engine for this service and some 2000 of these engines have been sold for this class of service. Due, however, to the increased demand for engines of larger horsepower rating to take care of deeper wells which are now bieng drilled, the 40 and 60 hp. units are offered and a number have already been placed in service.



FAIRBANKS-MORSE PUMPING ENGINE

The engines are standard units, which have been modified to permit the direct connection of a reversing clutch or the use of a countershaft and the governor has also been changed to permit a speed variation from 100 to 300 r.p.m. A direct connected reversing clutch of the Continental-Acme type or the new Continental Timken bearing type can be used. It is also possible to use the counter shaft type of reversing clutch built by the Continental Supply Company.

The governor has been especially developed for this service and the engine functions perfectly at the lowest speeds and will operate continuously at high speed ratings for pulling and swabbing. It is not, however, a high speed engine which lacks power to operate at slow speeds.

840 Horsepower Diesel

A line of large Diesels, the largest of which is 840 horsepower is also announced by Fairbanks, Morse.

These new engines are of the two stroke cycle, single acting, port scavenging, airless injection type incorporating a number of features such as two stage combustion, pressure lubrication throughout, reversible and centralized control and a built in scavenging pump. Although compact, the engines have been designed for accessibility, hard service with minimum operating attention and high fuel economy.

As airless injection of fuel and two-stage combustion had proved effective in the smaller engines, the same principle was used in the new design. In this system the fuel is sprayed into a combustion chamber at the top of the

Houston Sectional Portable Buildings

For the Oil Industry—Combine Economy and Stability—

Above photograph shows mess hall building as used for the convenience of employes. We also manufacture and carry in stock a complete line of buildings for every purpose. 72 page new catalog sent on request showing many types. These buildings are sectional, are readily erected by unskilled labor—are made in all sizes and easily taken down and re-erected.

HOUSTON READY-CUT HOUSE CO. (*Successors to Crain Ready-Cut House Co.*) **Houston, Texas**

cylinder. The timing of the injection is such that the flow of air from the cylinder up through the neck of the combustion chamber space meets the injected fuel, causing considerable turbulence and an intimate mixture of the fuel and the air.

This mingling of air and fuel takes place just at the instant of the maximum compression of 500 pounds. As the temperature at this compression is 1000 degrees F. or more, the fuel charge ignites and slow combustion begins. With insufficient oxygen in the chamber for complete combustion a part of the fuel charge burns to carbon monoxide. As the piston recedes on the downward stroke, the gases flow through the neck into the cylinder space, where the cylinder air mixes with the CO gas and remaining oil vapor and the final combustion of the charge to carbon dioxide gas is completed.

A rotary pump draws the lubricating oil from a main storage tank and forces it through a duplex strainer and a cooler into the header in the lower base of the engine. The oil enters the header under pressure and is distribute by branch lines to all main bearings and through the drilled shaft and connecting rods to the crankpins and piston pins.

A tube from the piston pin connects with the cooling space in the piston head, the oil leaving by a telescopic pipe from this space to an oil pocket in the upper base of the engine. From this point the oil, after passing through a thermometer well on the outside of the upper base, discharges into the lower base and finally flows into the main storage tank to repeat the cycle.

Control of the engine is centered in a compact and accessible unit, located at the center of the engine, which houses the injection pumps and the air starting mechanism.

Ball Bearing Motor

The new Fairbanks-Morse type OW motor for oil well pumping and pulling service indicates the widened trend toward the use of ball bearing motors in the oil fields.

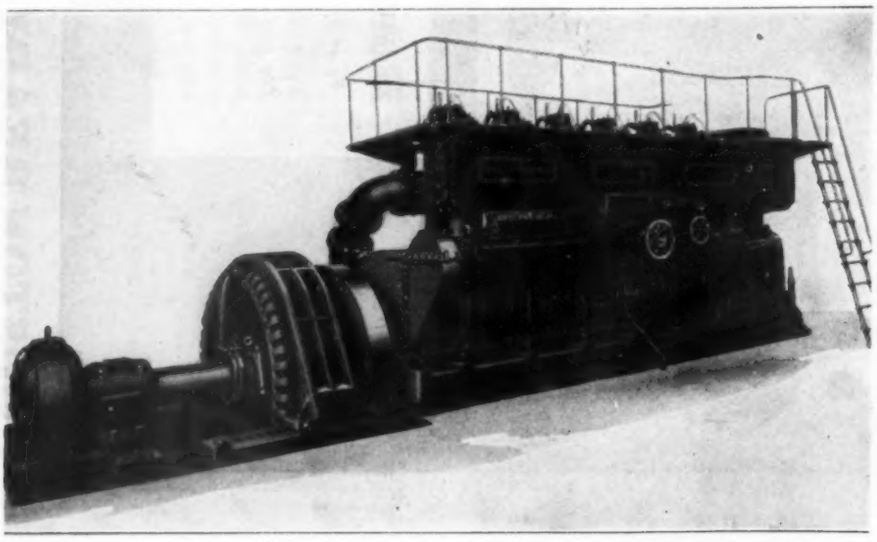
This line of machines is built in two sizes: a 15-35 hp. and a 20-50 hp. The smaller machine operates at a synchronous speed of 600 r.p.m. on the low side and a speed of 1200 r.p.m. on the high side while the 20-50 machine operates at a synchronous speed of 450 r.p.m. on the low side and 900 r.p.m. on the high side. Both machines are normally built for 440 volts.

The new type OW motor has a number of features which will be of especial interest to oil field engnieers and which have already indicated their value under field conditions. The most important of these is unquestionably the use of ball beraings since this is the first time that this type of bearing has been available in a motor for oil field service. Since oil field motors are operated in rather isolated sections and sometimes run for weeks at a time on pumping service without proper attention from an operator, it is necessary that a motor for this service be practically trouble proof. The use of ball bearings eliminates the necessity for frequent inspection and will make it possible to operate the type OW motor for long periods of time if desired without inspection.

Lubrications of the ball bearings is not dependent on oil film since bearings are supported by a point contact.

Enclosed Ventilated Motor

Another recent motor development which is of considerable interest to the oil fields is a new type of enclosed ventilated motor. This is a new Fairbanks-Morse product and in this motor the windings are totally enclosed by means of two spun copper shields. The cooling of the motor is taken care of by a patented shrouded fan which not only blows air around the shields and across the stator core but also cleans the air by centrifugal action as it is drawn into the motor.

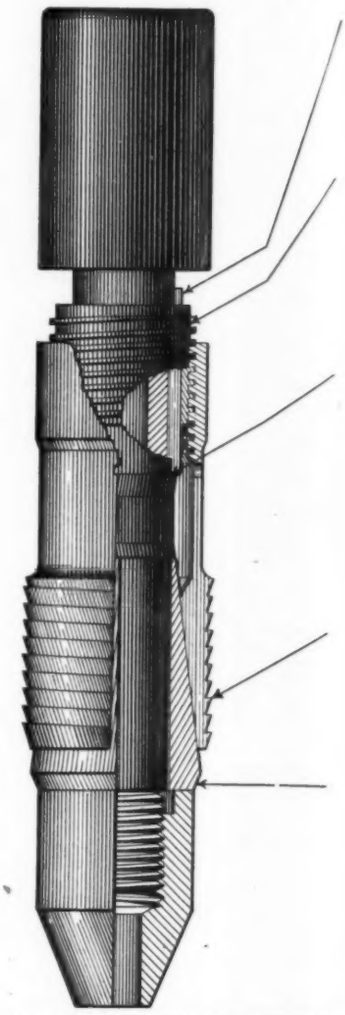


840 HORSEPOWER DIESEL

E I W Casing Spear

EVANGELINE IRON WORKS, Ltd.

The E. I. W. Release Casing Spear, made by the Evangeline Iron Works, Ltd., Vinton, Louisinaa, and Orangefield, Texas, is a new product, recently announced.



EVANGELINE IRON WORKS RELEASE CASING SPEAR

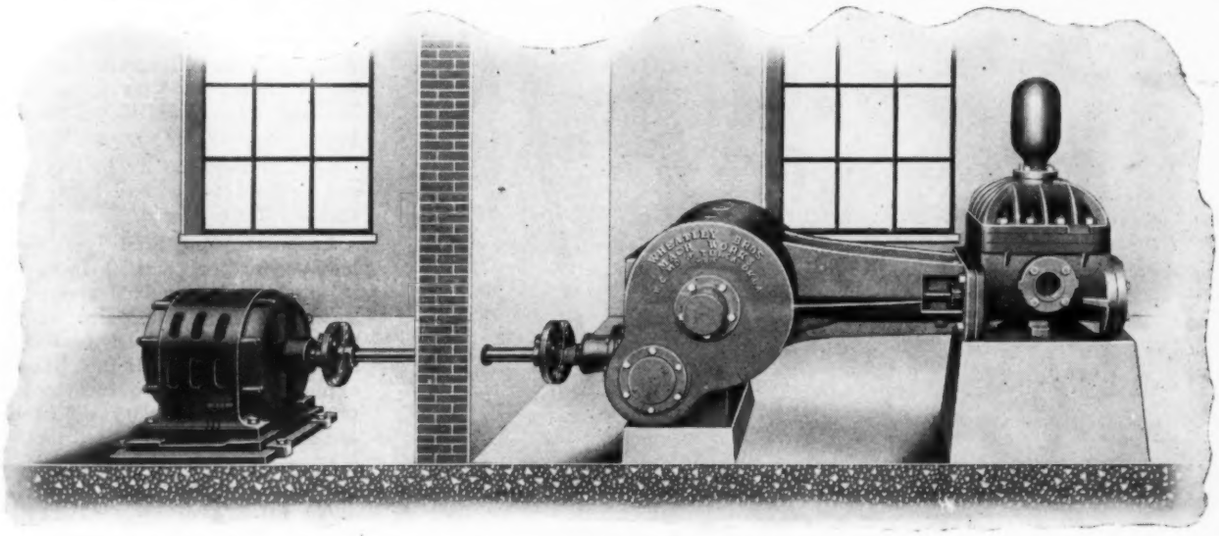
The spear consists of a spear stem with keys, a releasing nut, a stop shoulder on the stem, a spear slip, top coupling, bottom guide, and a mandrel.

To operate the outfit the spear is set with releasing nut well up in the top of the slip. This allows the gripping teeth section of the slip to rest on the mandrel. In this position an upward pull on the spear spreads the gripping segments of the slip to a positive hold on the casing.

To release, the spear is lowered slightly, and rotated toward the right. This runs the releasing nut downward in the slip until it rests on the stop shoulder of the stem, raising the slip upward and away from contact with the mandrel. The spear is now loose and ready to be withdrawn.

More details will be supplied on request.

A New Wheatley Stationary Pumping Unit Enclosed Type—5x10 Duplex Heavy Duty



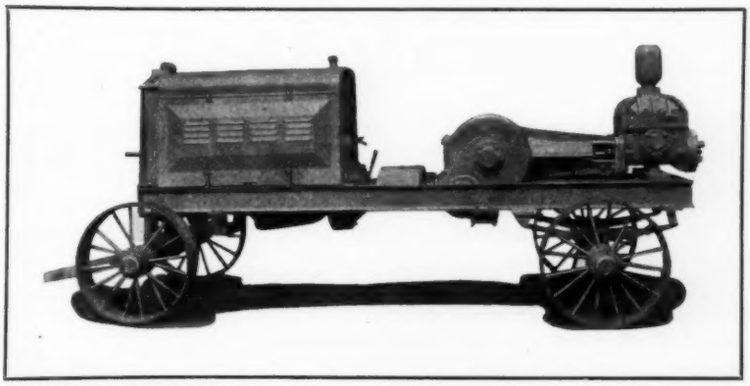
No Oil Cups to Bother with . . . . All Working Parts in Oil Bath . . . . All Working Parts Featuring Timken Roller Bearings . . . . Steel Connecting Rods, Gearing and Crankshaft . . . . Large Valves of Bronze.

REDUCES FIRE HAZARDS—This New Wheatley Stationary Pumping Unit permits a partition to be erected between Motor and Pump. This reduces fire hazards to an absolute minimum as sparks from motor cannot ignite gases.

SAFE — EFFICIENT — ECONOMICAL

Wheatley Portable Pumping Units 5x10 Duplex

Heavily Constructed and substantially Built. Equipped with high-grade 53 H. P. heavy truck engine, Pierce governor insuring perfect control. Natural gas carburetor will be furnished at small extra charge.



CAPACITIES

Wheatley Portable Pumping Unit Will Produce 210 barrels at 65 R.P.M. at 300 pounds pressure. Ninety barrels can be Pumped at 65 R.P.M. at 800 pounds Pressure. Working Limit 1000 pounds.

Complete Information Supplied Promptly on Request.

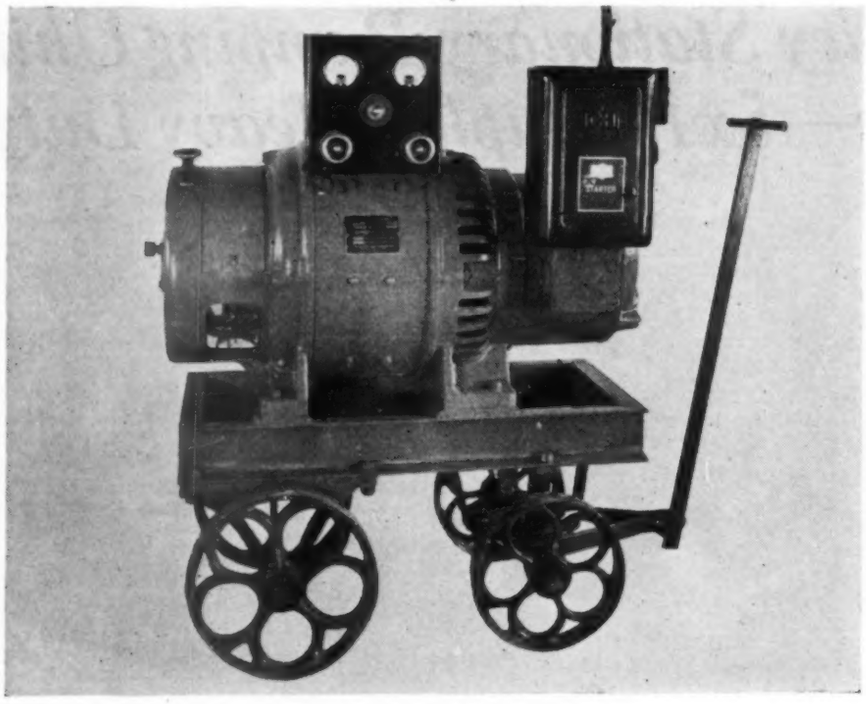
Manufactured and Sold By

WHEATLEY BROTHERS

PORTABLE PUMP

Factory: 1906 Wyandotte Street
KANSAS CITY, MISSOURI

24-26 North Owasso Street
TULSA, OKLAHOMA



FUZON PORTABLE WELDER

Portable Arc Welder

FUSION WELDING CORPORATION

The Fusion Welding Corporation, 103rd Street and Torrence Avenue, Chicago, Illinois, announces an addition to the Fuzon line of Arc Welders. The new machine is a direct current outfit operated by a three-phase a. c. motor, either 220 or 440 volts. The welding generator and motor are mounted on the same shaft, giving a two-bearing unit.

The feature of the outfit, according to the manufacturers, is the "flexible" arc. Aside from possessing unusual stability the arc has a new quality which makes it possible to increase or decrease instantly the arc length by a half inch without extinguishing it.

The machine has no external stabilizer, no field rheostat and no separate exciter.

With the "flexible" arc, new operators can melt an electrode without breaking the arc. It is also said that an operator can work continuously with the outfit and maintain a high quality weld.

Elimination of auxiliaries in the outfit gives it reduced weight. A brush shifting device controls the welding current and gives the welder a wide range. The current can be varied from 50 to 300 amperes.

The Fusion Welding Corporation is an associate of the Chicago Steel & Wire Company and information on the outfit will be supplied by either concern, upon inquiry, at 103rd Street and Torrence Avenue, Chicago.

Super-Power Tractor

CLEVELAND TRACTOR CO.

The Cleveland Tractor Company, Cleveland, Ohio, is putting on the market the Cletrac "100," a super-power tractor. Specifications of this power unit are as follows:

Motor—Six cylinder, four cycle, water cooled, valve in head. Cylinders cast in pairs. Six inch bore, seven inch stroke. Crank shaft 45 per cent carbon steel, heat treated SAE "H", supported on four bronze-back babbitt lined main bearings which are 3¼-inches in diameter. Pistons are cast iron having four quarter-inch wide piston rings. Connecting rods are 35 per cent carbon steel, I-beam heat treated SAE "H". Valves chrome silicon steel 2⅝-inches in diameter.

Motor Lubrication—Force feed lubrication to crank shaft, camshaft, connecting rods and wrist pins. Splash lubrication to cylinder walls. The oil relief valve is located on the outside of the right hand side of the motor block. All excessive oil is by-passed to the timing gears. The pressure is supplied by the use of two gear driven pumps.

Ignition—Delco Remy Dual type throughout, semi-automatic, manual spark control. Generator and starting motor Remy 12-Volt type. Battery, Willard type GHLR-31, 12 volt, 15 plate, capacity 152 ampere hour.

Governor—Taco fly ball type governor is used with hand control for increased motor speed.

Carburetor and Fuel System—Schebler Carburetor, size 2 inch. Intake manifold is hot-spotted above the carburetor and at the point of inlet to cylinder head to insure perfect vaporization of gases. All fuel lines are of copper tubing. Two fuel tanks, each one having a capacity of 50 gallons, are mounted on the platform.

Vacuum Tank—Two gallon capacity vacuum tank mounted on the dash.

Oil Filter—Oil filter is mounted on right side of motor.

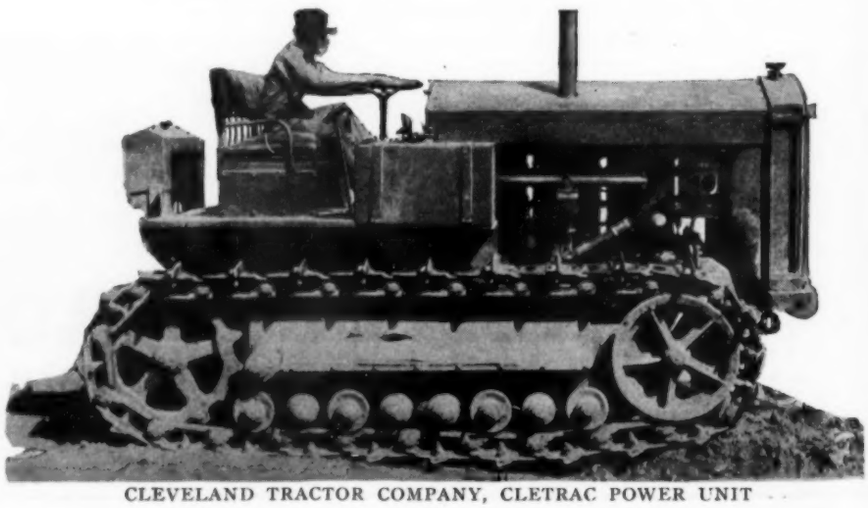
Clarifier—All air entering the carburetor is cleansed by Pomona Clarifier, securely mounted to the motor and motor cover.

Cooling System—Tube and fin radiator for cooling. Capacity, 27 gallons. The fan has six blades, driven from double groove pulley at the end of the crank shaft by two composition V-type belts. Built-in tightener is used in conjunction with the fan assembly.

Clutch—Clutch, Multiple disc, heavy duty, nine plate, 12 inches in diameter.

Transmission — Selective type — 3 speeds forward, one reverse. All shafts and gears made of alloy steel and heat treated. Heavy duty ball bearings are used throughout. All gears run in a bath of oil supplied by a gear driven oil pump.

Steering—Steering is accomplished by the effect of the motor through planetary compensating gears. As pressure is applied to either side of the brake drums by the steering gear, it



CLEVELAND TRACTOR COMPANY, CLETRAC POWER UNIT

IVERSON TOOL COMPANY

TULSA OKLA

208-9 Tuloma Bldg. Phone 4-0702

OIL WELL TOOLS

FISHING AND DRILLING

NEW TOOLS USED TOOLS

OIL FIELD BLACKSMITHS AND MACHINISTS

FISHING TOOL RENTALS

DAY OR NIGHT

OIL WELL SUPPLIES

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TULSA OKMULGEE ARTESIA, N. M. BORGER, TEXAS IRAAN, TEXAS

Greetings— American Petroleum Institute

W. R. RAMSEY

Oil Producers

General Offices

18th Floor Petroleum Building

Oklahoma City--Okla.

W. E. RAMSEY

also slows down the respective track on the drum to which the pressure is applied, causing the opposite track to speed up.

Drive Sprocket Wheels—The drive sprocket wheels are of cast steel, high point manganese, and have full manganese sprockets riveted to the wheels. This assembly is supported in extra large shafts mounted on heavy duty ball bearings.

Lower Track Wheels — The lower track wheel assemblies are of the plain bearing design having cast iron bearing boxes with hardened steel shafts. Lubricated by the use of two one-shot force-feed oil systems. There is one pump at each set of lower track wheel bearings.

Tracks and Tractive Surface—Tracks are 19 inches wide, 14 inch pitch, grousers are ¼-inch high and 26 inches wide. There are 23 manganese steel shoes in each track having 1⅜-inch diameter special chrome manganese steel track pins. The bushings and rollers are made of the same steel, heat treated. Length on ground each side is 104 inches, giving a total tractive surface of 3950 square inches, with a ground pressure of 7.4 pounds per square inch.

Speeds—Three speeds forward; low, up to 1¾ miles per hour; intermediate, up to 2.8 miles per hour; high, up to 4.6 miles per hour, and reverse, up to 1.8 miles per hour.

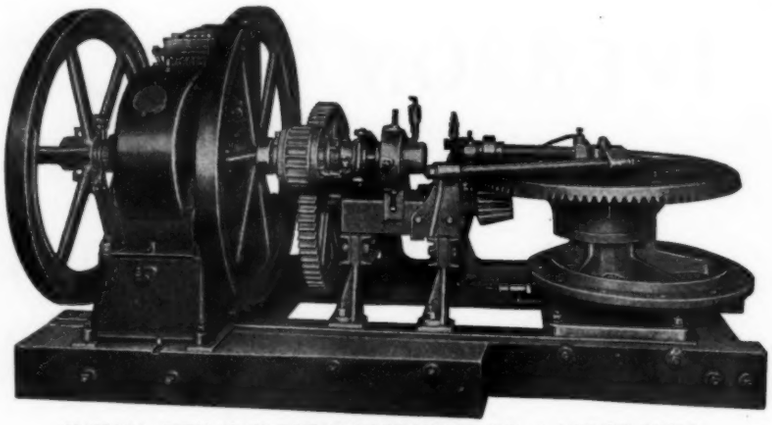
Turning radius—Turning radius is 15 feet.

Ratings—Rating at the draw bar, 100 horsepower at the power pulley, 120 horsepower. Maximum draw bar pull is 21,000 pounds at 1¾ miles per hour.

General Dimensions—Height, 7 feet 2 inches. Width, with grousers attached 8 feet. Length over all, 14 feet 10 inches

More information will be supplied by the company, on request.

FOAMITE GENERATOR



KANSAS CITY HAY PRESS LIGHTNING NO. 3 POWER UNIT

Foam Generator Outfit

FOAMITE-CHILDS CORP.

The most recent addition of the Foamite-Childs Corporation to its line of fire fighting equipment, is a portable foam generator. Various tests with the generator have shown it to be very effective for putting out oil fires.

Through the use of the generator a stream of fire-smothering Firefoam is created by introducing a dry chemical compound into a stream of water.

The generator consists of a hopper into which the powder is poured at time of fire and is automatically drawn into the body of the generator by the suction produced by water which passes through the generator at a predetermined rate of flow for a given pressure.

Inlet and outlet connections for suction and dischrage hose are provided and also a special shut-off valve for controlling the water supply to the generator.

Further information will be supplied by the company on request.

Lightning Field Power

KANSAS CITY HAY PRESS COMPANY

Kansas City Hay Press Company, Kansas City, Missouri, is introducing its new power for oil field pumping, called Lightning No. 3.

In this power the drive gear is inverted and forms its own guard. Rod lines are actuated by a broad faced eccentric, the same as used on band wheel powers, and delivers a full 18-inch stroke.

The main eccentric shaft is four and one-half inches in diameter and is supported at both its lower and upper ends. The hub has a bearing 17 inches long and is lubricated by a positive acting plunger pump which draws oil out of the base and delivers it into the top of the eccentric hub. This oil also is fed into the eccentric and passes back into the base and is used over and over.

The Stover engine is also equipped with a positive lubricating system of its own.

The timber frame of the power is reinforced with steel angle irons.

All parts of the machine are made to close limits so that interchangeability is assured.

The power comes in a belt-driven machine equipped with its own countershaft so that it may be connected direct to any standard electric motor or gas engine.

LAW CONDUIT GATE VALVE

Conduit Gate Valve

DESOTO FOUNDRY & MACHINE CO., LTD.

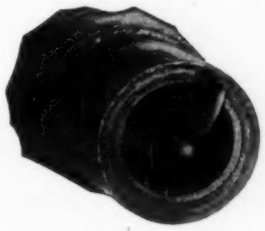
The Law conduit gate valve being made by the DeSoto Foundry & Machine Company, Ltd., Mansfield, Louisiana, is announced for pipe line service.

The valve uses the same type of movable parts common to practically all valves having double gates, with the addition of a simple three-part rider.

The rider completes, when the valve is in full open position, a conduit securely locked between the case rings or valve seats.

The valve is tested to 2000 pounds water pressure when open, 750 pounds closed.

The photograph above is of a plug with firing wires of a material that is being used by all spark plug manufacturers. Note how this material has been burned and eroded after only 18 hours service in an engine in the West Texas oil fields where the sulphur content is high in the gas and oil.



The photograph above is of a Stitt plug, with the new Stitt special firing wires, after it has given more than four months continuous service in the same engine operating with gas having high sulphur content, in the West Texas fields. This plug is still in service. Note how little the firing wires have been burned or eroded.

There Is a Stitt Spark Plug for Every Make of Engine

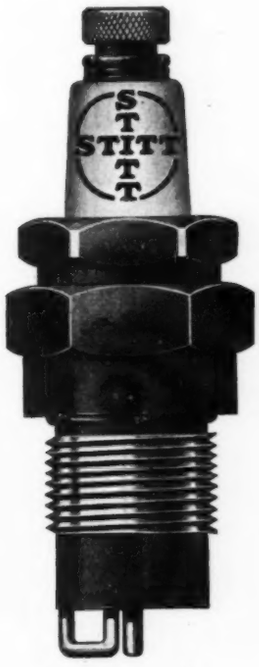
ILLUSTRATED SPECIFICATION FOLDER SHOWING ALL TYPES OF PLUGS MAILED ON REQUEST

No. 12
⅞" Regular

For

Bessemer—New O. C.
Buda
Clark (All Compressors)
Climax
Continental
Foos
Hercules
Keystone Driller
Le Roi
Waukesha
Wisconsin
and
All trucks except Fageol 6 cylinder and White ¾ to 2 Ton.

No. 19
⅞" Long



For

Bessemer (Enclosed case)
Clark (2 Cycle Drilling)
Cooper
Domestic
Stover (K Type)
Winton

No. 25
½" Extra Long

For

Black Bear
Bovaird & Seyfang
J. C.
Marion
Olin
Superior [Commercial Type]
Tico 2
Weber

No. 28
¾" Extra Long

For

Commercial
Reid—top of cylinder
Superior [Compressor Type]
Star Drilling

For sale at all oil and gas field supply stores

STITT IGNITION CO. MANUFACTURERS COLUMBUS, OHIO

Oil Field Special Truck

SELDEN TRUCK CORPORATION

The new Selden "Special" Roadmaster, Model 60, recently announced by the Selden Truck Corporation, Rochester, New York, is an adaptation of the regular Roadmaster model to provide greater endurance and stability required by oil field operation. The line and general appearance of the "special" remain the same as the regular Roadmaster, the changes having been made in the mechanical construction only. This model is also recommended for hauling three-batch loads in road building service.

Obtainable in two wheelbases, 165½-inch standard and 180½ inches long, the "Special" has a capacity of four tons and a speed of 30 miles per hour direct and 37 miles per hour overdrive.

The power plant is a six-cylinder 86-horsepower engine with removable head and seven-bearing crankshaft. A dual range transmission is used, giving seven forward speeds and two reverse. The fourth speed in the high range is an overdrive, increasing the truck speed 25 per cent, without increasing the engine speed. Power takeoff is through an auxiliary transmission. This arrangement permits driving the winch in any of the seven transmission speeds and in each of the reverse speeds. Also permits driving the truck while operating the winch.

Power is transmitted from clutch to transmission through a Spicer 7½-inch cushion universal, from transmission to auxiliary transmission through a Spicer 8½-inch long life cushion universal; from auxiliary transmission to rear axle through a large diameter tubular shaft with large size metal universal joints.

Final drive is through a double reduction full floating axle, with single expanding brakes in cast steel drums. This axle has 3000 pounds more carrying capacity than the regular Roadmaster axle.

A larger front axle is used. It is drop forged "I" beam alloy steel with Timken bearings.

The radiator is of the fin and tube type, of heavy construction with cast iron shell. Cushion rubber mounting prevents vibration and strain.

Heavier springs, both front and rear, are used, with a special helper spring on the top of the rear springs. They are semi-elliptic, 40 inches long by 2½ inches wide with 11 leaves in front and 56-inch by 3-inch with 15 leaves in the rear main. The auxiliary spring is three inches wide and consists of three leaves. Radius rods and brackets are also of heavier construction than the regular Roadmaster.

Rolled steel channel bumper is standard on this model, also a heavy drawbar hook installed on rear of frame. Pneumatic tires are standard, 34x7 front and 38x9 rear or 34x7 dual rear. Steering is through Ross gear of the cam and lever type. Chassis weighs 6550 pounds.

More details will be provided by the company, on request.

Kerotest Control Valve

KEROTEST MANUFACTURING COMPANY

The Kerotest Manufacturing Company of Pittsburgh has developed a control valve for the purpose of automatically shutting in a flowing well after the well has caught on fire. The complete installation is made up of three separate units.

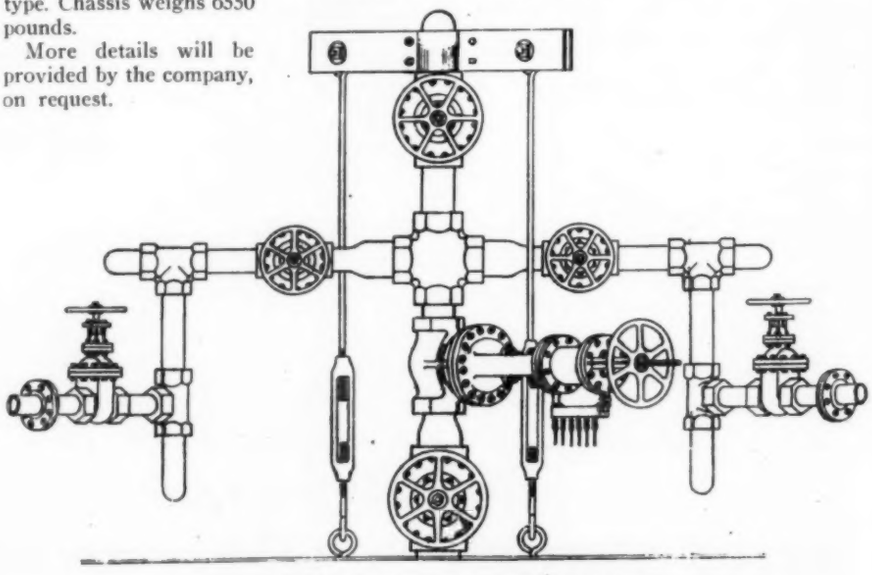
1. High pressure, air operated, cast steel drilling valve.
2. Series of fusible links.
3. High pressure air storage cylinder.

The automatic air operated valve is designed to close when air pressure is released into operating cylinder. There is an automatic locking device on the stem of this valve which prevents valve re-opening unless released by hand.

The second unit consists of a series of specially designed fusible links, which will admit air to operating cylinder when the links are subjected to a temperature of 212 degrees F. Any number of these links may be employed. They may be located at any desired points on the well or in the rigging. A direct line from storage cylinder to operating valve will permit closing, independent of fusible links.

A third unit is a high pressure air storage cylinder, mounted with a specially designed valve, together with necessary fittings and gauge. This cylinder of compressed air furnishes ample power to operate the fire control valve at all times, and may be placed at any desired location. It may be placed on the derrick floor, or remote from the derrick, either above or underground.

More information is available on request to the company, The Kerotest Manufacturing Company, Pittsburgh, Pennsylvania.



KEROTEST CONTROL ASSEMBLY

1100 Barrels per day being pumped without a rod break

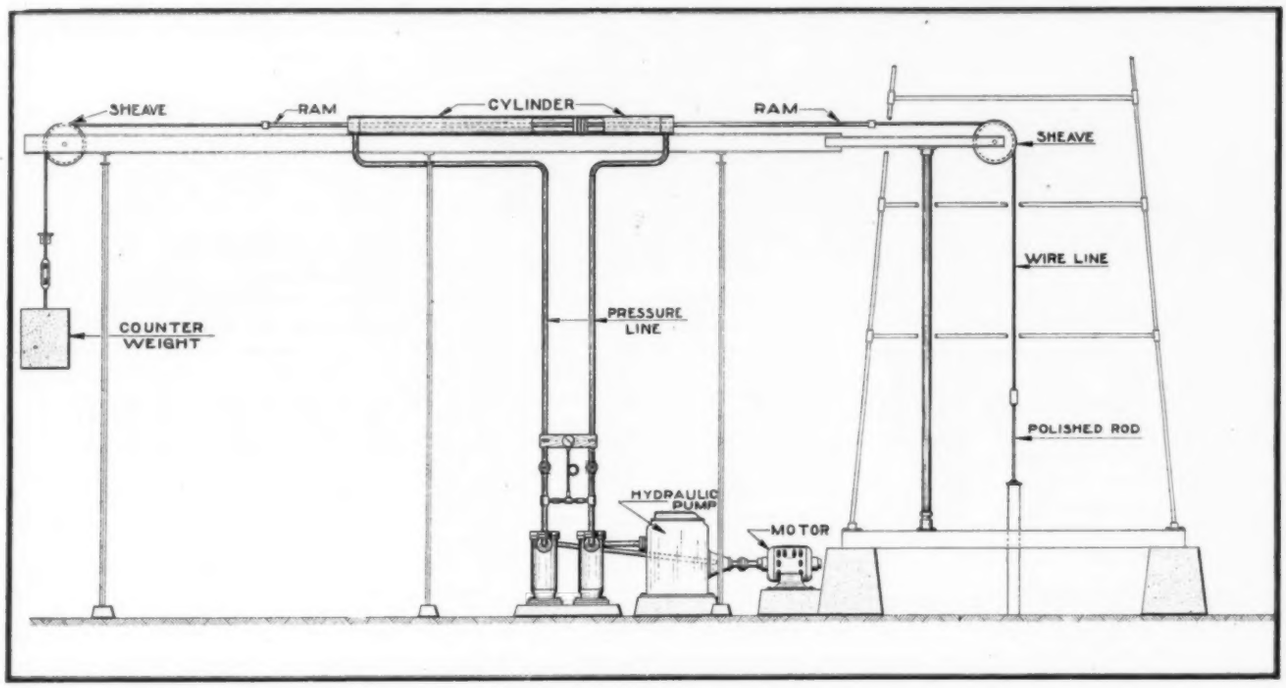


Diagram Showing Principle of Long Controlled Stroke Pump

FEATURES:

1. *Absolute* control of reversal speeds.
2. *Complete* stop at each end of stroke.
3. *Any* length of stroke up to 15 feet.
4. *Any* polished rod speed desired.
5. No *crank* or *circular* motion to rods.
6. Driven by any *constant* speed power.
7. *Entirely* clear of derrick floor.
8. *Highly* efficient and economical.
9. *Protected* against overloads.
10. *Foolproof* and *durable* construction.
11. All loads *exactly* counterweighted.
12. No large foundations required.
13. Will pump from *any* depth well.
14. Will *not* break rods.
15. *Increases* life of plunger cups.
17. No beam required.
18. Belts and pulleys *unnecessary*.
19. Developed by *practical* oil men.
20. Utilizes *proven* hydraulic principle.
21. Experimental work *completed* on *our* well.

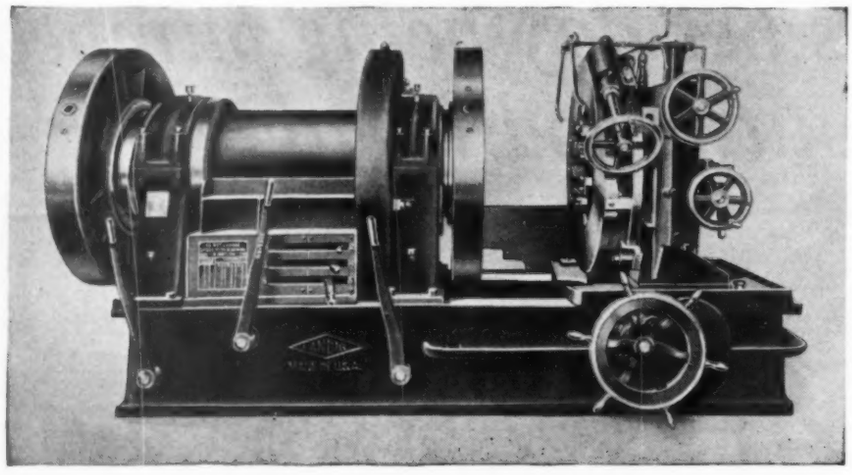
After many months of experimental work we are offering to the oil well operator a truly practical long stroke pumping unit developed by oil men in the oil fields on our deep wells.

We are pleased to announce that we have entirely eliminated rod breakage, increased production, increased the efficiency of operation, reduced shutdown time to the minimum, and, in short, have greatly reduced the producing cost per barrel.

What we have done in our field we can do in yours. We will be glad to help you with your problems.

Manufactured and Sold By

T. J. WOOD **910 Mid-Continent Building** **TULSA, OKLA.**



LANDIS NEW 16-INCH PIPE THREADER

New Pipe Machines

LANDIS MACHINE COMPANY

The Landis Machine Company, Waynesboro, Pennsylvania, has added to its line of pipe threading and cutting off machines a new 16-inch size.

Range of this machine is from eight to 16 inches, inclusive. One die head is employed for covering this range, and the entire range is made with one set of chasers.

Travel of the carriage of the machine is 25 inches. It has eight speeds. The driving pulley is 18 inches in diameter and takes an eight-inch belt. Floor space required for the outfit is six feet, two inches by 11 feet, six inches. Equipped for belt drive, the machine weighs 16,900 pounds, and 18,000 pounds for the motor drive.

On the operating side of the machine is a gear box and single pulley drive. The gear box is located beneath the main spindle and through it are obtained the different speeds. Gears are of steel, cut and run in an oil bath. Shaft bearings are lubricated by a forced feed system. Main bearings are lubricated by flat-link chains running in oil reservoirs.

Front and rear gripping chucks have universal adjustment. The rear chuck is equipped with flange grips for screwing flanges and collars on and off. Both chucks are of the three-jaw type.

A reverse drive located in the gear box is used for putting on and taking off flanges. The reverse is controlled by the middle lever. The lever located near the front chuck is employed for starting and stopping the machine when threading. The lever near the rear chuck is used for starting and stopping the machine when doing flange work.

The cross rail supports the die head and at the rear is fitted with centering jaws, cutting off tool, and reaming tool. The reaming tool may be locked for the reaming operation.

The die lubricating system includes a rotary pump, a by-pass for the surplus oil, and special control valves at the head and cutting off tool.

If the machine is motor driven, the motor is mounted on a plate over the gear box and a silent chain transmits the power from motor to machine.

Taps for Field Shops

The Victor plant of the Landis Machine Company has placed upon the market a new line of taps, known as the Victor Style M. Receding Chaser collapsible Tap. This tap is designed for cutting tapered threads in tool joints, casing shoes, pipe couplings, pipe flanges, valve bodies, fittings, etc. This new Style M. Receding Chaser Collapsible Tap replaces the present style in sizes 4-inch and larger.

The Victor Style M Tap is made in three groups employing one body with a series of detachable heads in each group.

The body of the Style M tap includes the cam collar, cam slide, cam, plunger extension, expanding collar, trip ring rods and minor details.

The head of the Style M tap includes the plunger, chaser blocks, chasers, tap and trip ring.

The head is made of 1045 S. A. E. steel, heat treated and ground all over, including the seat of the chaser block slots. It is bolted to the flanged end of the body by hollow head socket screws placed in the bottom of the chaser block slots. Ground surfaces on both the head and body insure alignment. A heavy key is inserted between the body and head to take the driving strain.

The chaser blocks are made of 1045 S. A. E. steel, hardened and ground all over. These blocks are interchangeable among all the heads in Group L— (4-inch to 5-inch) and are interchangeable in all heads in Group II and III (6-inch to 24-inch.)

Inasmuch as the chaser blocks are permanent parts of the tap, there is no danger of variation each time the chasers are changed.

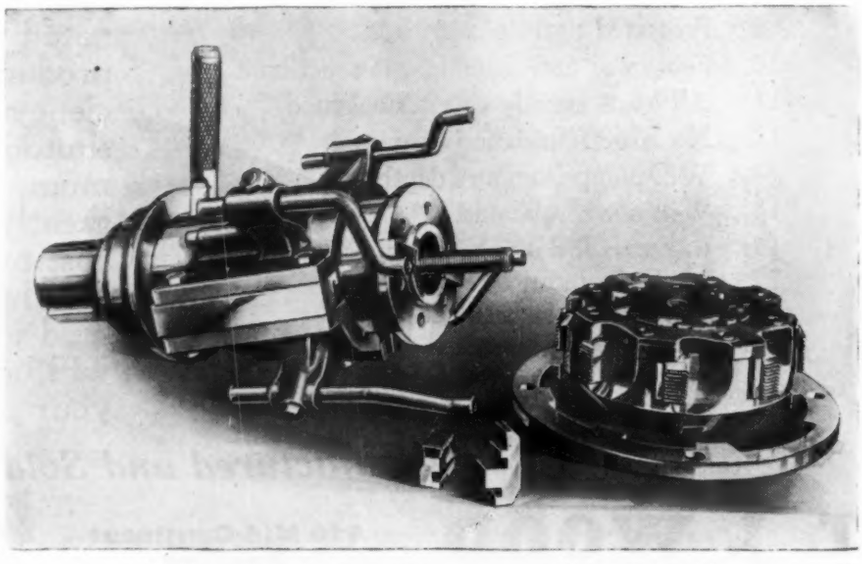
The chasers are made of high speed steel and ground all over. Threads are ground after hardening to insure accuracy of form and lead and to give maximum service. The number of chasers used per head is on the basis of one per inch in the even number sizes. The odd number sizes have the same number of chasers as the one size smaller even number. For example seven-inch head has six chasers. Chasers for cutting any form of thread can be supplied. Chasers are regularly being furnished for cutting A. P. I. standard threads employed in oil fields for casing shoes, couplings, etc.

The plunger of the Style M tap is made of 1045 S. A. E. steel, and is hardened and ground all over. The seats of the slots in which the chaser blocks move being ground insures perfect bearing to provide maximum accuracy and life.

The trip ring is also made of 1045 S. A. E. steel, is hardened and ground to provide maximum wear on account to contact with the work during the tapping operation. The holes for attaching the trip ring rods are so placed that the same rods will fit all rings in the same group. A separate trip ring is required for each size of head.

The body of the tap is made of 1045 S. A. E. steel. It is internally and externally ground to afford proper fits for all working parts.

The cam collar is a semi-steel casting which carries a cam slide and cam. Its



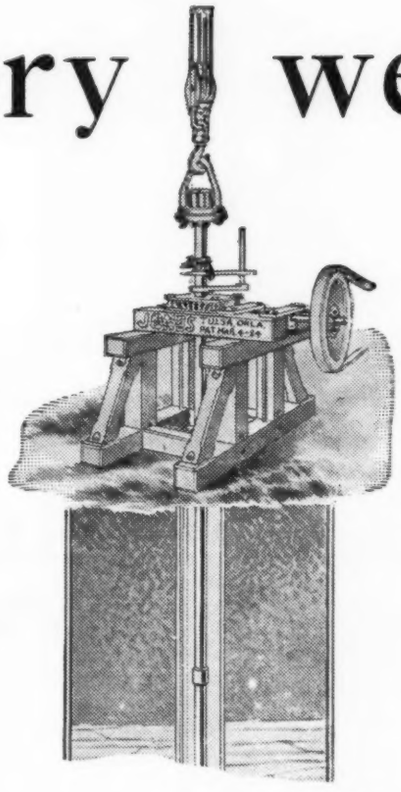
VICTOR STYLE M RECEDING CHASER COLLAPSIBLE TAP

Evils

Paraffin
Corrosion
Burnt and Loose Sand

that lurk

in every well....

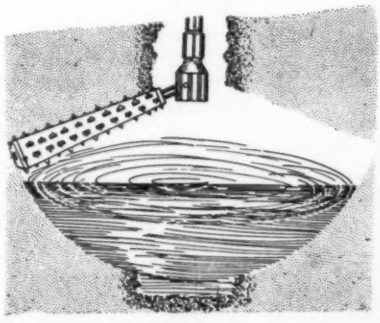


Operates on tubing from any well—any depth.

Runs with standard rig, or any make of cleanout machine or tractor.

Saves time—CUTS CLEANING COSTS IN TWO. Increases production by enlarging seepage area.

Removes paraffin, corrosion and burnt sand. Eliminates sand troubles, rejuvenates the oil sand.



The Jones Oil Well Reamer

The Jones Oil Well Reamer removes the cause of production loss by correcting the faulty conditions found in the average well.

There is only one sure way to remove paraffin and corrosion and that is by cutting it from the walls of the well. This the Jones Reamer does by increasing the seepage area 3 or 4 times. The new face cut on the oil sand permits a freer flow of oil, greatly increasing production.

All sand wells may be reamed in the place of shooting, which insures a larger drainage area and does not burn or pack the sand.

In use by the leading Oil Companies for the last seven years. Write for prices and terms.

Jones Oil Well Reamer Co.

1702 East 6th Street **Telephone 2-1398**

Tulsa, Oklahoma

position on the body and distance which it moves along the body determine the length of thread being cut. A special cam collar is required for cutting threads longer than the maximum length of 4½ inches provided in the tap.

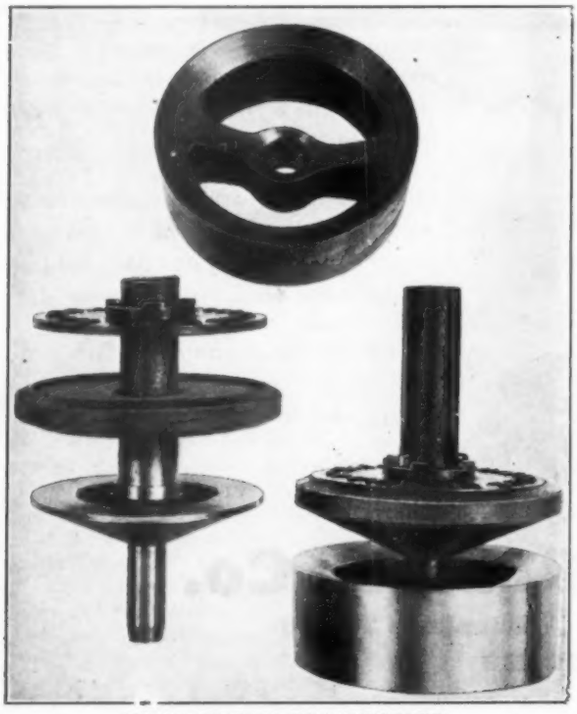
The cam slide is made of tool steel, hardened and ground all over. It is inserted in the top of the cam collar and carries the cam as the collar recedes.

The cam is also made of tool steel, hardened and ground on all sliding surfaces. The top is milled for cutting any two tapers of thread by proper pivoting in the cam slide. The cam works between two hardened tool steel gibs inserted in the tap body. Angles are milled on the sides of the cam for contact with the plunger extensian. A downward movement of the cam, imparted by the cam collar and cam slide causes the plunger to recede and in turn draws the chasers to produce a tapered thread. Hardened tool steel shoes are set in the plunger extensions for contact with the cam.

The expanding collar on the tap is to expand the chasers and set the cam collar in the tapping position when the tap is rotated. A straight forward or downward pressure against the collar will accomplish this. This is usually done by means of a yoke ring engaging the collar on the return movement of the spindle while the tap is in motion.

The collar is also a positive collapsing feature by means of the cam collar striking it on completion of the thread, through a pin inserted through the collar and the plunger extension, drawing back the plunger.

More information will be mailed by the Landis Machine Company, Waynesboro, Pennsylvania.



PUMP PISTON UNASSEMBLED

New MacClatchie Items

MacCLATCHIE MANUFACTURING COMPANY

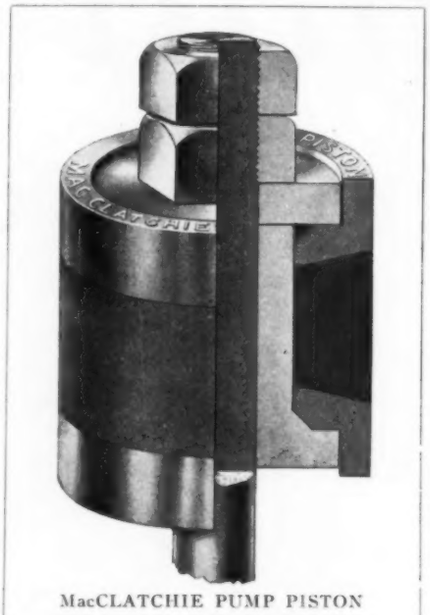
MacClatchie Manufacturing Company, Compton, California, lists four new items among his products for the past year.

Pump Valve

The MacClatchie pump valve was designed for heavy duty on deep holes. Records show that the valve has functioned efficiently on holes more than 7000 feet deep.

Slush Pump Piston

In the slush pump piston, force of the pump pressure exerted against the rings of the piston causes the rubber to expand toward the cylinder walls, giving maximum efficiency on the working stroke.



MacCLATCHIE PUMP PISTON

Rubbers and rings are replaceable at a nominal cost.

Rotary Underreamer

The underreamer is automatic in its expansion and contraction. Clockwise rotating expands the underreamer. One-eighth of a turn to the left contracts it. The tool can be expanded or contracted at any depth of the hole, which means, according to the manufacturer, that additional pipe can be added to the string without regard to the casing shoe.

Due to the large amount of cutting edge, the tool is a fast one.

Stop Cocks

High pressure cocks for two and one-half inch, three-inch, and four-inch duty on cementing and regular operations are being marketed by MacClatchie. These cocks have an unusually long core, a special MacClatchie washer, an extra heavy nut, and a ribbed body of special alloy.

Elms Specialty Company, Wichita Falls, Texas, is the Mid-Continent distributor of MacClatchie products. This company or the manufacturer will supply further information, on request.

MacCLATCHIE ROTARY UNDERREAMER

Forged Cast Gear

HILL CLUTCH MACHINE AND FOUNDRY COMPANY

The Hill Clutch Machine and Foundry Company, Cleveland, Ohio, has perfected and is now marketing a forged cast gear.

The gear has forged steel teeth and a semi-steel hub. The construction is an annular forged ring in which is cast a hub, either with web or arms depending on the dimensions. After casting, the completed gear is finished, machined and the teeth cut.

The junction of the steel rim and semi-steel center is a laminated weld of steel

MacCLATCHIE STOP COCKS

MC-MAN OIL & GAS COMPANY

PRODUCERS of CRUDE OIL

And

MANUFACTURERS of NATURAL GASOLINE

General Offices

P. O. BOX 712 :-: TULSA, OKLAHOMA

JOSEY OIL COMPANY

Producers of

Oil and Gas

411-416 Mid-Continent Bldg.

TULSA, OKLAHOMA

Darby Petroleum Corporation of New York

Producers of Crude Oil

Mid-Continent Building

TULSA, OKLAHOMA

and iron and the finished gear is one integral piece.

The thickness of the forged steel rim is proportioned to the teeth. Any height of tooth or width of face can be cut. The hubs have both ends faced and are taper keyseated.

Additional information regarding the product and the process of manufacture will be supplied by the company, on application.

Straight Hole Bit

KENNEDYE-PLUMB CORPORATION

KENNEDYE-PLUM STRAIGHT HOLE BIT

Kennedye-Plumb Corporation, Railway Exchange Building, St. Louis, Missouri, announces a K-P Straight Hole drilling bit to the rotary drilling industry.

In manufacturing the bit it is machined to a very close tolerance and is said to be dead straight from pin end to the bottom of the cutters.

The cutter blades, of which there are two, do all the cutting, and are said to be self-sharpening on account of their construction.

The reamers, two to each bit, are provided with two cutting edges to each reamer. These edges are 11 inches long, therefore each reamer has 22 inches of cutting edge per side. The reamers extending 11 inches up the side of the head, act as secondary cutters on the bottom for one and one-half inches per side. In backing up the cutter blades at a different angle, they prevent the bit from dropping into a fault.

The bit consists of one head, two cutter blades and two reamer blades. The reamer blades are inserted first, long ways of the head, and are provided with forged steel lugs which fit into machined recesses in the head and are thus held in place.

The cutter blades are inserted crossways of the head and are provided with forged steel lugs which fit into machined recesses in the head, and are thus held in place. The reamers and cutters are held in place by separate lugs and are further locked by means of a locking screw. The locking screw locks the two together and holds the cutter blades from coming out side-ways. The locking screw can be made safe by means of a wire loop cotter key or wire nail.

When K-P bits have reached a point where the cutting edge is entirely worn off, the K-P patented water course touches the bottom of the hole thus shutting off the pump.

More detailed information can be had concerning the bit by writing the company.

Dodge Timken Governor

DODGE MANUFACTURING CORPORATION

The Dodge Timken Automatic Belt Governor, a recently introduced product of the Dodge Manufacturing Corporation, Mishawaka, Indiana, is claimed by the company to be among the most efficient governors yet offered to the power trade.

The governor is said to add life to the belt by reducing slippage and by lifting the belt out of contact when the drive is not in use.

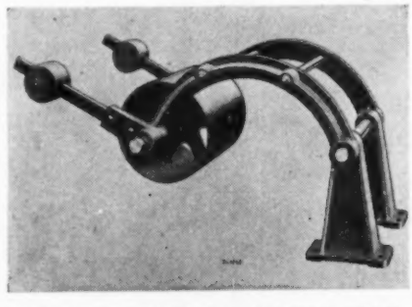
Timken tapered roller bearings are used in this governor. Bearings are protected from dust as well as from lubrication troubles by grease seals which prevent dust and dirt working in or lubricant working out.

The clamp-sleeve type of Dodge-Timken mounting is used on pulleys for narrow belts and comparatively moderate loads, while the solid shaft mounting is used for wide face pulleys and heavy loads. In the case of the last mentioned mounting, the shaft is substituted for the clamp sleeve. The shaft is ground to size and threaded to receive adjusting collars at each end.

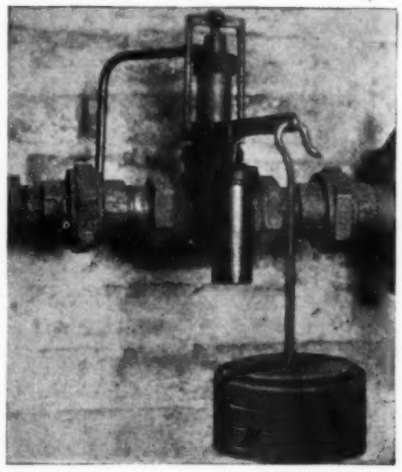
Pulleys are solid cast iron of ample proportions and proper size to accomodate the belt to be governed.

According to the manufacturers, the governor acts instantly taking up slack due to sudden increase of load, and maintains the desired speed on machines. Maximum contact is insured by the belt being held constantly and evenly against the smaller pulley. Belt tension can be accurately and conveniently adjusted so that the load can be carried without excessive strain.

More detailed information can be had upon application to the company.



DODGE TIMKEN AUTOMATIC BELT GOVERNOR



DAVIS PRESSURE REGULATOR

Pressure Regulator

G. M. DAVIS REGULATOR COMPANY

An improved, automatic pressure regulator suitable for the accurate reduction of high steam pressures either at the boiler or on the line, is announced by the G. M. Davis Regulator Company, 422 Milwaukee Avenue, Chicago.

In this regulator the control pressure which actuates the balancing piston is taken from the center of the valve body and passed to the piston through the hollow piston rod. The piston is isolated from the rush of the gases except through this channel so that it is shielded from the unbalancing impact of high velocity discharges.

The piston operates in a bronze cylinder and is grooved and lapped so that it needs no other packing. Pressure adjustment is made by altering the weights on the counterbalance arm, which works without springs so that only the force of gravity is used to maintain the balance of pressure.

The regulator is made in a full range of sizes for handling initial steam pressures up to 300 pounds per square inch.

More information will be mailed on request to the company.

"B-M-W" Swab Valve

BRADFORD MOTOR WORKS

The Bradford Motor Works, Bradford, Pennsylvania, announces a new swab valve to be known as the "B-M-W Swab Valve."

The valve is 24 inches long, equipped with four cups and six inches of packing kept under tension by a coil spring.

According to the manufacturers, the item is best described by stating that it is a combination of a regular four-cup valve and a Landis rope valve.

More information will be provided upon request to the company.

The Largest Expansion Rotary Underreamer Ever Built— And It's a MacClatchie

1225 Feet of 19" Hole in 16 Hours With One Set of Cutters

Records like these are responsible for its popularity and adoption as standard equipment by two of the world's largest oil producers. Names on request.

Simplicity in construction.

❖❖

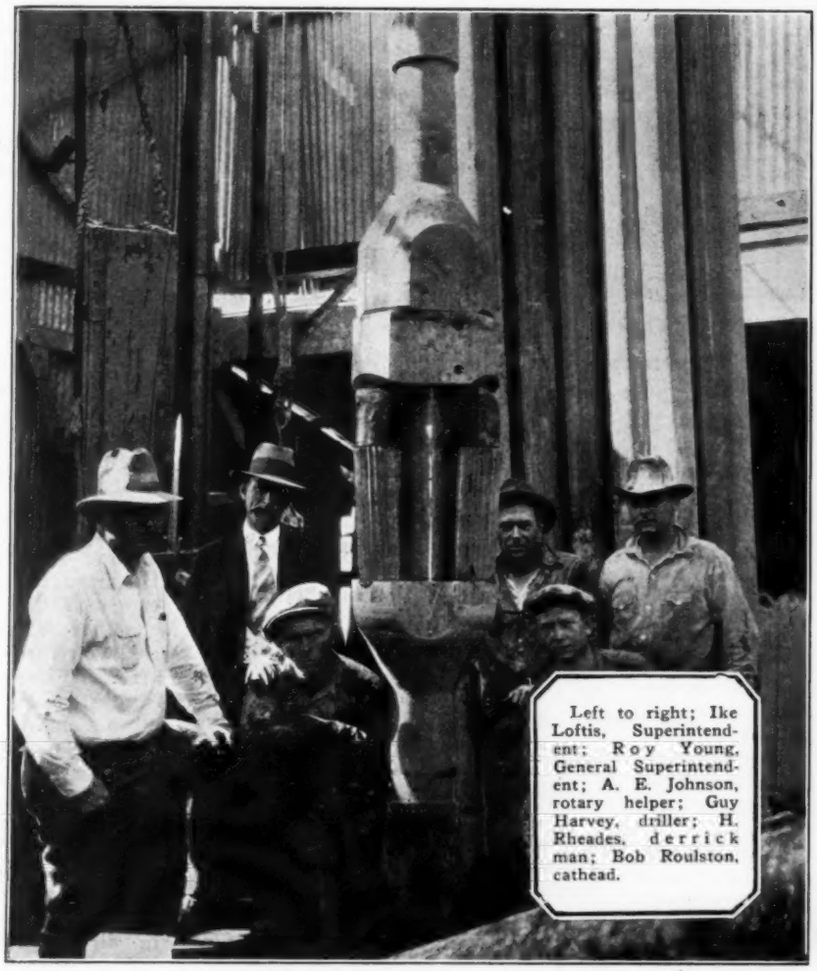
As easy to run in and out of the hole a a roller bit.

❖❖

Materials of construction the finest obtainable throughout.

❖❖

Rental Service in every California field.



Left to right; Ike Loftis, Superintendent; Roy Young, General Superintendent; A. E. Johnson, rotary helper; Guy Harvey, driller; H. Rheades, derrick man; Bob Roulston, cathead.

Positive expanding roller cutters.

❖❖

Large amount of cutting surface on each roller—more footage with fewer round trips.

❖❖

Cutters easily and economically replaced.

❖❖

Made in all sizes 4½" to 24"

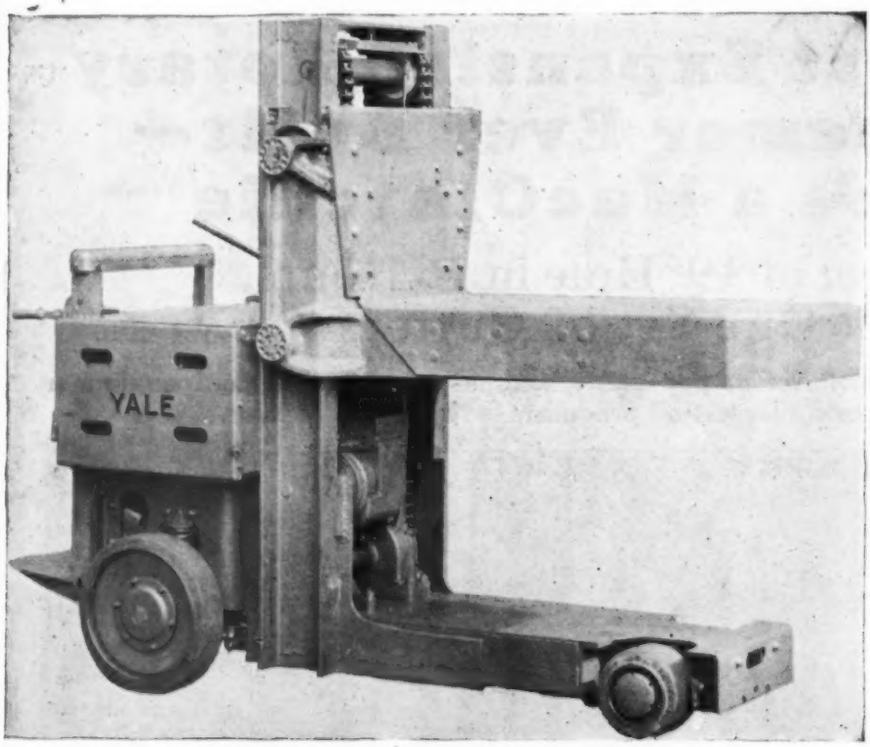
Pan American well, State No. 1, Rincon, California, using "Oilwell" Hild Drive and MacClatchie Rotary Underreamer

Write for new catalog describing the complete line of MacClatchie Quality Products—Safety Automatic Catheads, Quick Change Cement Heads, Quick Unions, Flow Nipples, Mud Pump Valves and Pistons.

MacClatchie Manufacturing Co.

COMPTON CALIFORNIA U.S.A

or at your supply house



YALE & TOWNE THREE-TON HIGH LIFT TRUCK

Three Ton Lift Truck
YALE & TOWNE MANUFACTURING COMPANY

Yale & Towne Manufacturing Company, Stamford, Connecticut, announce a new three-ton high lift truck which will be found adaptable to oil field machine shops where electricity is available.

The backbone of the frame work comprises a large gusset plate, extending from the front end of the truck to the small or trailing wheels. In addition to forming the frame work, it provides a yoke to serve as a guide for the drive unit and the spring suspension of the truck. Upright channels or platform roller guides are attached to this gusset plate through three-fourth inch diameter rivets, and in addition by welding strips of steel either side of the vertical channels to serve as a pocket or guide.

Structural parts of the truck are joined with five-eighths inch and three-fourth inch rivets.

The elevating platform is raised and lowered through the medium of a one-and one-half inch diamond roller chain, passing over a power-driven sprocket at the bottom, and an Idler sprocket at the top. Hyatt heavy duty roller bearings are used in the Idler sprocket. Shifts of the lower sheaves run in a bath of oil, which also serves to lubricate the spur-gear reduction unit. The two ends of the roller chain are attached to the platform through a spring take-up device, which will automatically adjust itself as the chain wears.

The hoisting motor is connected to the spur-gear pinion through a spring ratchet, so arranged that a positive drive is obtained when raising the elevating platform. A speed of seven and one-half feet per minute is obtained when lifting a full load, and a speed of 19 feet when raising the empty platform.

Four rollers bearing on the inside of the flanges of the vertical ship channels support the elevating platform in the horizontal position. Hyatt bearings are used in these rollers.

Special study in design of the machine has utilized all the available space so that the over all length of the outfit when in operation is reduced to the minimum.

The main drive unit is of the double reduction spur-gear type, driving the wheels through totally enclosed universal joints.

Steering knuckle king pins have been fitted with ball and roller thrust bearings which puts the entire weight of the machine on anti-friction bearings.

A four-wheel steer feature allows a turning radius of 96 inches to the outside edge of the truck.

Additional features of the outfit will be mailed upon request to The Yale & Towne Manufacturing Company, Stamford, Connecticut.

White Two-Ton Truck
WHITE COMPANY

Designed for operation in the medium capacity class at high speed, the new White two-ton truck should find a ready market in the oil industry.

The engine, which is combined with the clutch and transmission in a unit power plant assembly, is of the "L" head, four-cylinder Mono bloc type with removable cylinder head. Combustion chambers are machined.

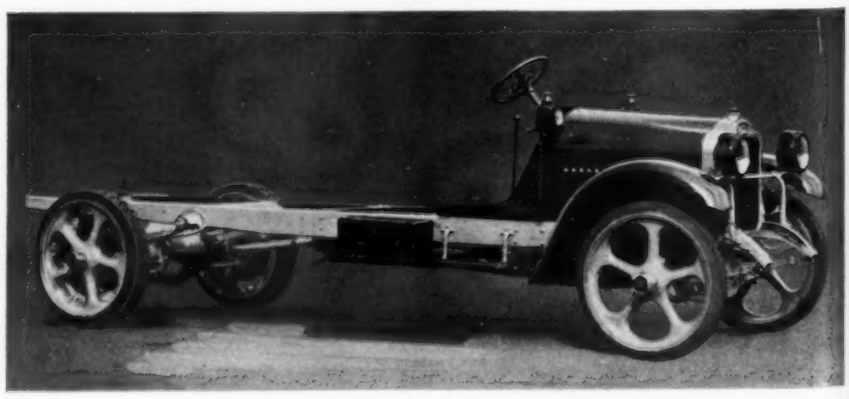
Aluminum alloy pistons of the constant clearance type are used. It is claimed that these pistons insure smooth operation and also assist in keeping the lubricating oil in a clean condition.

The crankshaft is of rugged construction and ample bearing surface is provided.

Connecting rods of I-beam section have direct babbitted bearings and are provided with a drilled hole running lengthwise through the rod, which enables oil under pressure to be fed to the piston pin bearings. The piston pins float in both piston and the connecting rod end.

The lubrication system provides for a continuous supply of oil under pressure to all crankshaft, camshaft, connecting rod and piston pin bearings. By means of an exclusive feature, all return oil must pass into a settling chamber before passing up into the oil reservoir through a screen of generous area. This separates any sediment that is present and insures that only clean oil is supplied to the pump.

A relief valve automatically controls the maximum pressure and is fully operative irrespective of weather conditions and variations in the viscosity of oil. The timing and pump driving gears are lubricated through an adjustable orifice set in the main delivery tube which regulates the oil pressure in direct proportion to the engine speed. Piston and cylinder walls are



WHITE TWO-TON TRUCK

FULLER-REX devices for PUMPING WELLS

SUPER-SAFE ❖❖❖ SUPERLATIVE

BIG WORDS, but we stand back of every word 100 per cent.

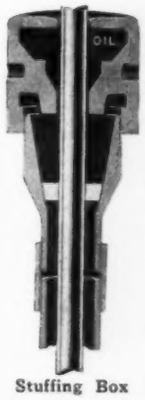
Rod Hanger

Our tools are made to STAND THE GAFF.
SAFETY FEATURES are our first consideration. Rex products are approved by EXPERT SAFETY ENGINEERS before being put on the market.

Cheap Tools=False Economy+ Juggling Human Life

May your accident reports never read, "DEATH DUE TO ACCIDENT WHICH COULD HAVE BEEN AVOIDED IF CERTAIN WELL KNOWN SAFETY DEVICES HAD BEEN IN USE."

Do not weigh dollars against human life. Equip your wells with Fuller-Rex Safety Devices and PROTECT YOUR WORKERS.



Stuffing Box

Fuller-Rex Facts

Sucker Rod Elevator

Fuller Rod Hanger

Catches on the square of the rod, cannot slip or sag. Impossible to shake or drop rod off the hook. Installed in 30 minutes. No chains to kink. Can be moved from well to well, but at our price you can afford to equip every well.

Fuller Stuffing Box

The only stuffing box you can be sure WILL STAND THE GAFF on a high pressure gas well. Self lubricating. Never wears out. The stuffing box without an equal.

Rex Stuffing Box

Designed to meet the demand for a light weight stuffing box where the gas pressure is medium.

Rex Sucker Rod Elevator

The elevator supreme. Positively will not tip. Strong enough to pull all any rod will stand. Light enough to be handled with ease.

Rex Safety Hook

Designed for heavy duty. Tested to 40 tons tensile strength. Sucker rod elevator cannot come out of hook unless released from hook by hand.

Rex Belt Tightener

The ONE MAN BELT TIGHTENER—Takes care of wide or narrow belts. Will take up five feet of slack at one time without readjustment. Neither belt nor tightener can slip during operation as tightener is held in place by a ratchet wrench and can be released only by manual effort.

Combination Rod Socket

Guaranteed not to split or spread. So constructed that it is not possible for a part of the slip to come out and fall in the hole.

Special Steam Line Lubricator

Made of high grade material. All fittings are of solid brass. Capacity, 10 gallons. Tested to 250 pounds cold water pressure.

Neill Boiler Arch Bars

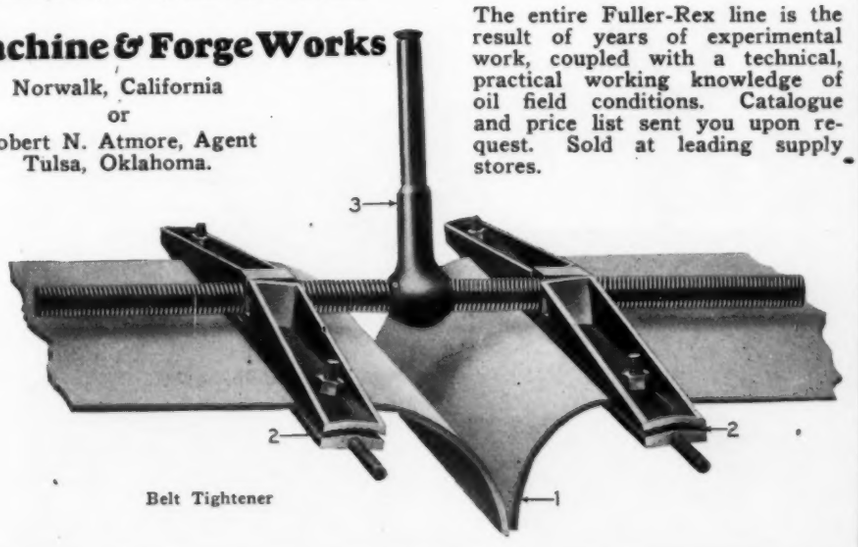
Sole rights to manufacture held by our organization.

Rex Safety Hook

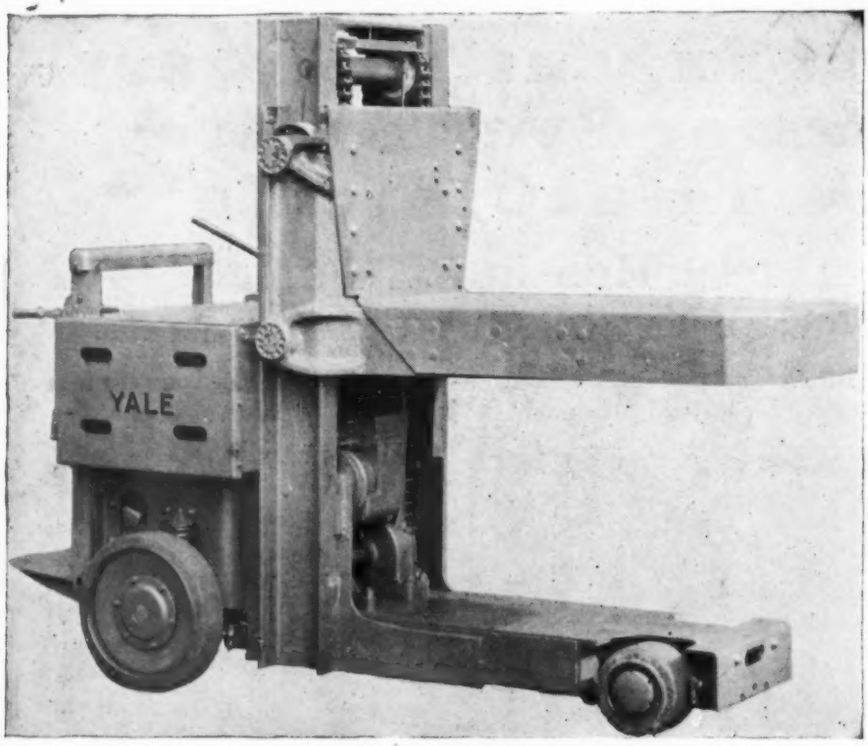
Fuller Machine & Forge Works

Norwalk, California
or
Robert N. Atmore, Agent
Tulsa, Oklahoma.

The entire Fuller-Rex line is the result of years of experimental work, coupled with a technical, practical working knowledge of oil field conditions. Catalogue and price list sent you upon request. Sold at leading supply stores.



Belt Tightener



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The backbone of the frame work comprises a large gusset plate, extending from the front end of the truck to the small or trailing wheels. In addition to forming the frame work, it provides a yoke to serve as a guide for the drive unit and the spring suspension of the truck. Upright channels or platform roller guides are attached to this gusset plate through three-fourth inch diameter rivets, and in addition by welding strips of steel either side of the vertical channels to serve as a pocket or guide.

Structural parts of the truck are joined with five-eighths inch and three-fourth inch rivets.

The elevating platform is raised and lowered through the medium of a one-and one-half inch diamond roller chain, passing over a power-driven sprocket at the bottom, and an Idler sprocket at the top. Hyatt heavy duty roller bearings are used in the Idler sprocket. Shifts of the lower sheaves run in a bath of oil, which also serves to lubricate the spur-gear reduction unit. The two ends of the roller chain are attached to the platform through a spring take-up device, which will automatically adjust itself as the chain wears.

The hoisting motor is connected to the spur-gear pinion through a spring ratchet, so arranged that a positive drive is obtained when raising the elevating platform. A speed of seven and one-half feet per minute is obtained when lifting a full load, and a speed of 19 feet when raising the empty platform.

Four rollers bearing on the inside of the flanges of the vertical ship channels support the elevating platform in the horizontal position. Hyatt bearings are used in these rollers.

Special study in design of the machine has utilized all the available space so that the over all length of the outfit when in operation is reduced to the minimum.

The main drive unit is of the double reduction spur-gear type, driving the wheels through totally enclosed universal joints.

Steering knuckle king pins have been fitted with ball and roller thrust bearings which puts the entire weight of the machine on anti-friction bearings.

A four-wheel steer feature allows a turning radius of 96 inches to the outside edge of the truck.

Additional features of the outfit will be mailed upon request to The Yale & Towne Manufacturing Company, Stamford, Connecticut.

White Two-Ton Truck

WHITE COMPANY

Designed for operation in the medium capacity class at high speed, the new White two-ton truck should find a ready market in the oil industry.

The engine, which is combined with the clutch and transmission in a unit power plant assembly, is of the "L" head, four-cylinder Mono bloc type with removable cylinder head. Combustion chambers are machined.

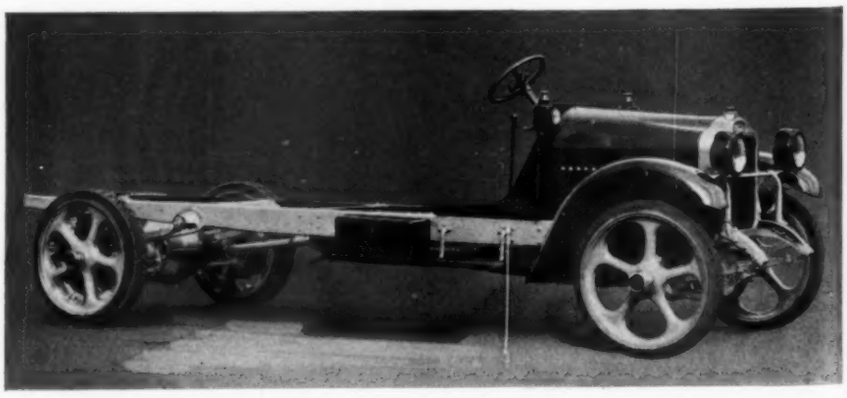
Aluminum alloy pistons of the constant clearance type are used. It is claimed that these pistons insure smooth operation and also assist in keeping the lubricating oil in a clean condition.

The crankshaft is of rugged construction and ample bearing surface is provided.

Connecting rods of I-beam section have direct babbitted bearings and are provided with a drilled hole running lengthwise through the rod, which enables oil under pressure to be fed to the piston pin bearings. The piston pins float in both piston and the connecting rod end.

The lubrication system provides for a continuous supply of oil under pressure to all crankshaft, camshaft, connecting rod and piston pin bearings. By means of an exclusive feature, all return oil must pass into a settling chamber before passing up into the oil reservoir through a screen of generous area. This separates any sediment that is present and insures that only clean oil is supplied to the pump.

A relief valve automatically controls the maximum pressure and is fully operative irrespective of weather conditions and variations in the viscosity of oil. The timing and pump driving gears are lubricated through an adjustable orifice set in the main delivery tube which regulates the oil pressure in direct proportion to the engine speed. Piston and cylinder walls are



WHITE TWO-TON TRUCK

FULLER-REX devices for PUMPING WELLS

SUPER-SAFE ❖ ❖ ❖ SUPERLATIVE

BIG WORDS, but we stand back of every word 100 per cent.

Our tools are made to STAND THE GAFF.
SAFETY FEATURES are our first consideration. Rex products are approved by EXPERT SAFETY ENGINEERS before being put on the market.

Cheap Tools=False Economy+ Juggling Human Life

May your accident reports never read, "DEATH DUE TO ACCIDENT WHICH COULD HAVE BEEN AVOIDED IF CERTAIN WELL KNOWN SAFETY DEVICES HAD BEEN IN USE."

Do not weigh dollars against human life. Equip your wells with Fuller-Rex Safety Devices and PROTECT YOUR WORKERS.

Rod Hanger

Stuffing Box

Fuller-Rex Facts

Fuller Rod Hanger

Catches on the square of the rod, cannot slip or sag. Impossible to shake or drop rod off the hook. Installed in 30 minutes. No chains to kink. Can be moved from well to well, but at our price you can afford to equip every well.

Fuller Stuffing Box

The only stuffing box you can be sure WILL STAND THE GAFF on a high pressure gas well. Self lubricating. Never wears out. The stuffing box without an equal.

Rex Stuffing Box

Designed to meet the demand for a light weight stuffing box where the gas pressure is medium.

Rex Sucker Rod Elevator

The elevator supreme. Positively will not tip. Strong enough to pull all any rod will stand. Light enough to be handled with ease.

Sucker Rod Elevator

Rex Safety Hook

Designed for heavy duty. Tested to 40 tons tensile strength. Sucker rod elevator cannot come out of hook unless released from hook by hand.

Rex Belt Tightener

The ONE MAN BELT TIGHTENER—Takes care of wide or narrow belts. Will take up five feet of slack at one time without readjustment. Neither belt nor tightener can slip during operation as tightener is held in place by a ratchet wrench and can be released only by manual effort.

Combination Rod Socket

Guaranteed not to split or spread. So constructed that it is not possible for a part of the slip to come out and fall in the hole.

Special Steam Line Lubricator

Made of high grade material. All fittings are of solid brass. Capacity, 10 gallons. Tested to 250 pounds cold water pressure.

Neill Boiler Arch Bars

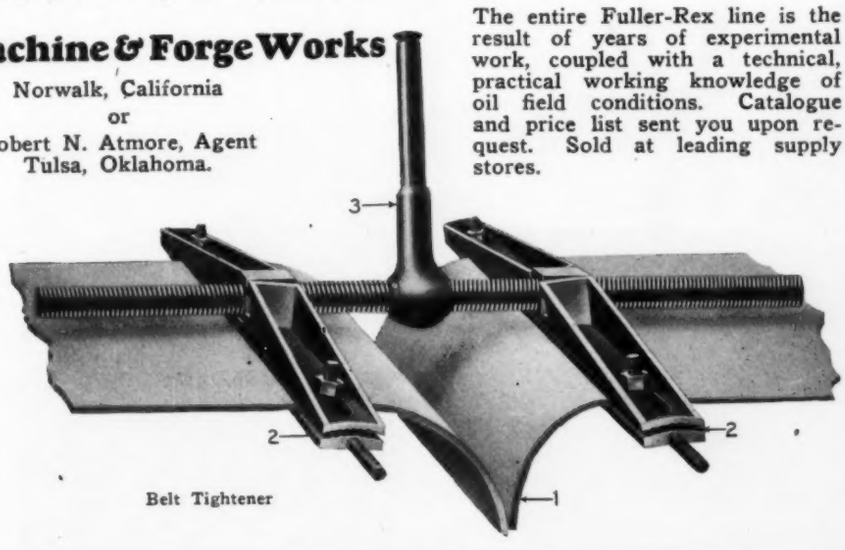
Sole rights to manufacture held by our organization.

Rex Safety Hook

Fuller Machine & Forge Works

Norwalk, California
or
Robert N. Atmore, Agent
Tulsa, Oklahoma.

The entire Fuller-Rex line is the result of years of experimental work, coupled with a technical, practical working knowledge of oil field conditions. Catalogue and price list sent you upon request. Sold at leading supply stores.



Belt Tightener

continuously lubricated through metered slots in the connecting rod bearings. Oil control rings are provided to maintain the necessary oil film on piston skirt.

Three-point suspension of engine is used to relieve the aluminum crankcase of undue strain.

The cooling provided by positive water circulation is effected by a gear-driven centrifugal pump.

The radiator consists of a heavy cast aluminum casing with removable cellular core and is mounted on spherical seats with a neatly housed form of spring retention.

The transmission of the selective four-speed type with direct drive on fourth provides a range of gear ratios carefully chosen for ease in operation.

The rear axle is of the single reduction type. Axle spindles are supported at the wheel ends by double bearings of the taper roller bearing type.

Rear wheel brakes are of the internal expanding two-shoe type operating in large diameter drums.

More complete information can be had upon application to the White Company, Cleveland, Ohio.

New Linn Tractor

REPUBLIC TRUCK SALES CORPORATION

The Linn Tractor now being announced by the Republic Truck Sales Corporation, Alma, Michigan, is a heavy-duty, heavy-hauling machine of the track laying type.

The mechanism, except for the traction member, follows the design of familiar standard truck parts. The various parts of the machine are accesible and each can be removed with the minimum of disturbance to the others.

Steering is done with an ordinary steering-wheel as in a truck. The Linn track is held to a full length bearing with the ground under severe conditions of pull because the weight of its front end is so far ahead of the driving sprockets.

The rear drive of 12 per cent manganese steel gives the machine unusual flexibility.

A mechanism which automatically compensates for unevenness in the ground.

The machine is so supported that no weight is carried on any axle.

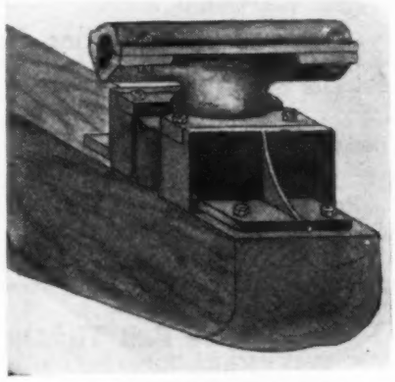
Four forward speeds are provided in the transmission.

Lubrication is by a mechanical lubricating device.

More information can be obtained from the company, on request.

Pitman and Oscillator

BOYKIN MACHINERY AND SUPPLY COMPANY



BOYKIN PITMAN OSCILLAOR

The Boykin Steel Pitman with its Pitman Oscilator, is introduced by the Boykin Machinery & Supply Company, Inc., Beaumont and Houston, Texas, as an entirely new development in oil field equipment.

The pitman is recommended as having special qualities of durability. The jaw or main casting is made of cast steel and is designed in a continuous loop. The lower bearing is removable, is made of brass, and is babbitt lined. The top bearing or lock casting, is babbitt lined, containing an oil box on the outside, feeding the oil directly to the center of the bearing. The casting is held in place by a key and can be easily and quickly removed.

PITMAN OSCILLATOR INSTALLED

The pitman fits standard stirrups. The spacer castings contain four or six holes, spaced four inches from hole center to hole center.

The pitman oscillator is built of steel in order that it may have qualities of durability equal to those of the pitman.

The base of the oscillator is rounded out to give the ball a perfect bearing in all positions. The lock cleat is bolted onto the base and is rounded out to form the upper bearing for the ball and prevents the ball from coming out on the up stroke.

There are liners between the cleats and the base for adjustment in case the ball should wear. Onto the ball is cast the lower half of the stirrup holder which is naturally shaped to give the stirrup a perfect bearing in all positions. Onto this is bolted the upper half of the stirrup holder which clamps the stirrup holding it rigid and minimizing wear.

The oil that is poured around the ball is retained in the base, thereby giving constant lubrication.

The oscillator can be installed on any walking beam in a few minutes, according to the manufacturers. Old stirrups which are practically worn out can be used with the oscillator. Automatic alignment of the pitman is assured, as stated by the manufacturers.

More information can be had from the manufacturers on request.

LINN TRACTOR, TRACK LAYING TYPE

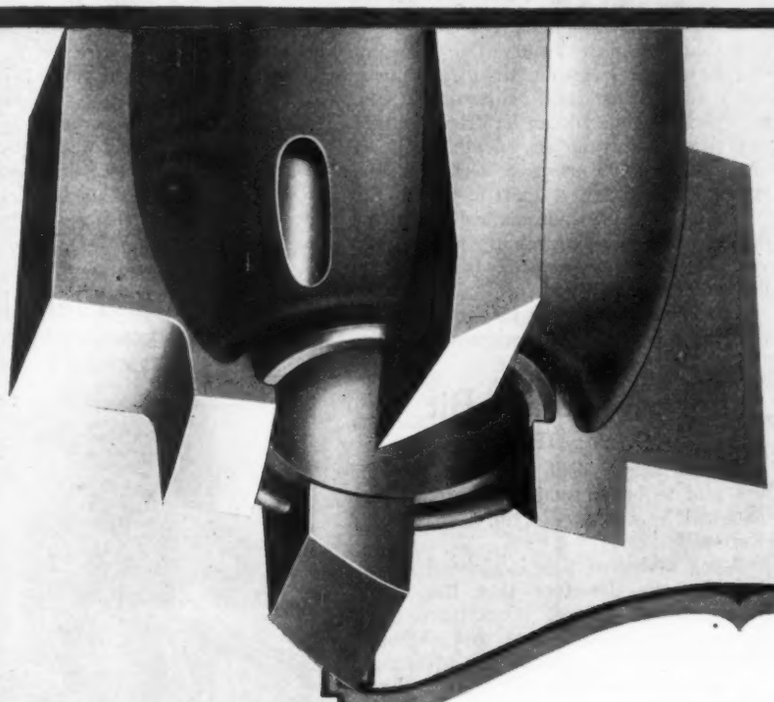
New Ventilating Fan

AMERICAN BLOWER COMPANY

The American Blower Company's Ventura Disc Ventilating fan is now furnished in the smaller sizes with a square pressed steel plate instead of the circular frame formerly provided and still used on the larger fans.

The ten blades of the Ventura fan are broad and slightly over-lapping. Their peculiar dip or curve, similar to that of the areoplane propeller, enables the fan to

A New Elliott Core Drill With Renewable Cutting Teeth



ELLIOTT CORE DRILL

Following the same general design of our standard core drill, but having the distinct and exclusive advantage of *renewable teeth.*

New cutting teeth for this model will be supplied at such low cost that the old ones, when worn dull, can be discarded entirely, eliminating the necessity of buying a complete new head or building-up.

All teeth are forged and the wearing surfaces are coated with stellite to insure maximum wear. Special steels, heat treated, are used for all parts subjected to excessive strain or wear.

For particularly hard formations, cutting teeth are provided with insets of metallic oxides of extreme hardness. Teeth prepared in this manner will drill the hardest rocks encountered in rotary drilling at moderate cost.

Particularly adapted for use in localities remote from railroad transportation or where arc welding is not readily available.

ELLIOTT CORE DRILLING CO.
850 Subway Terminal Building
LOS ANGELES, CALIFORNIA

BRANCHES:
3210 Harrisburg Blvd., Houston, Texas
15 So. Madison St., Tulsa, Okla.
618 Lake Street, Shreveport, La.
432 Park Street, Beaumont, Texas
Export Office: 150 Broadway, New York

handle exceptionally large volumes of air. These blades are riveted to a large central disc, which prevents back flow of air through the center when working against pressure.

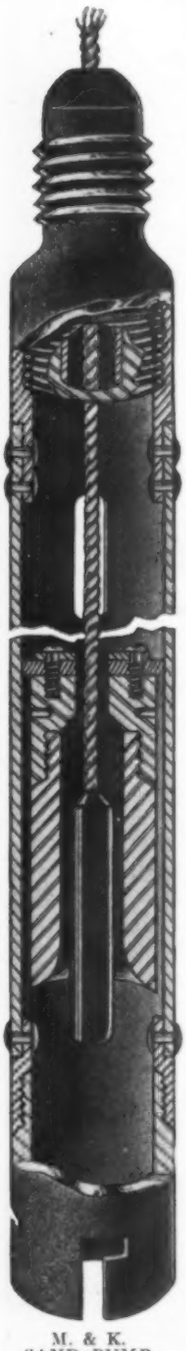
Further information will be supplied by the American Blower Company, 6000 Russell Street, Detroit, Michigan.

New M. & K. Pump Products

M. & K. PUMP AND SPECIALTY COMPANY

The M. & K. Pump and Specialty Company, Inc., 208 Bridge Street, Wichita Falls, Texas, has developed several new specialties during the year.

M. & K. Sand Pump



M. & K. SAND PUMP

The M. & K. Sand Pump was designed for pumping and bailing wells. A 25-foot length pump can be used on a pulling machine. On a standard rig, the pump can be put together in sections for any desired length.

In bailing fluid or slush in standard or rotary derricks, a bailer section can be used below the sand pump section. For cleaning out wells the sand pump section can be used below with an extension above for preventing the pump from falling over in shot holes.

The sand pump bottom sleeve is detachable and a bailer bottom or sand pump bottom can be used as desired. The head

To attach the sand line to the pump, the line is shoved through the center of the pump and out at the bottom end. The wire line is then babbitted into the wire line socket. This socket acts as the valve in the piston or plunger.

Packing can be replaced at the top of the piston by removing the cap screws and inserting new packing through slots in top of the pump.

Polish Rod Clamp

The new polish rod clamp is made from steel casting with only one bolt.

M. & K. POLISH ROD CLAMP

Pneumatic Displacement Pump

Within the near future the company will introduce a pneumatic displacement pump for lifting fluid with air or gas. It is claimed that oil can be lifted without emulsification from any depth well, on low pressure, by using a series of the pumps spaced 300 feet apart in the tubing.

Fluid in the well automatically controls the pressure and the pressure releases the valves. No back pressure is placed on the sand.

Additional details can be secured from the company, by direct communication.

New Rotary Bit

C. W. HERRIN

A new rotary drill bit involving what are said to be unusual features has been patented by C. W. Herrin, Kansas City, Kansas.

A big saving of time is claimed for the bit, due to the fact that the action throughout is forced. Continuous circulation and elimination of the pulling of the drill pipe are among its advantages. An automatic elevator also adds to the effectiveness of the outfit.

In operation of the bit, the drill pipe is raised 10 or 15 feet off the bottom, the automatic elevator is adjusted by rotating its bottom section until the compression lugs in the elevator are in a grab position.

By lifting the grip rings from the rotary table, the elevator may be lowered by a single cable through the table opening over the outside of the drill pipe as an overshot to engage the top end of the drill collar. Should the elevator sleeve bind between the drill pipe and the side of the hole, the cable tension naturally becomes slack and the drill pipe can then be pulled upward through the elevator.

When again lowered, the elevator will grip the pipe, allowing the full weight of the pipe to force it down past the obstruction until loosened, so it can slide freely downward to engage the top end of the bit sleeve, or drill collar.

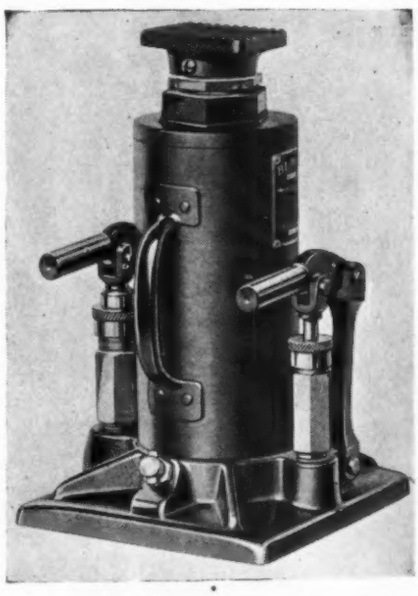
When the slidable section of the drill collar is lifted, it automatically releases the compression lugs in the drill collar from the bit joint and allows the collar, with two bits bolted to its bottom end, to be pulled upward, drawing the bits through slots in the chuck. Upon engaging 45 degree angles cut in big joint, the bits will be forced out until they are in a free position flat against the sides of the pipe. It then can be pulled by cable up over the outside of the drill pipe above the derrick floor, where the nut is removed from one and one-half-inch bolts holding the bits in place, and allowing them to be removed and replaced.

The lower section of the automatic elevator then is adjusted to release position by reverse rotation and the drill collar, when new bits are attached, can be lowered into the well. It cannot release drill collar, however, while being lowered until the bits are in drilling position. The bits are turned inward by a 45 degree angle at the top end of the chuck, which is the bottom end of the drill pipe, where they are wedged into a groove in the chuck, being locked rigid.

More information can be secured from the Landen Advertising Company, Kansas City, Missouri.

Hydraulic Field Jack

BLACK HAWK MANUFACTURING COMPANY



BLACK HAWK HYDRAULIC FIELD JACK

The Black Hawk Manufacturing Company, Milwaukee, Wisconsin, announces a line of hydraulic jacks using oil as a lifting medium.

A special feature of these jacks is that they are efficient in cramped places. The pump and ball check are built on the outside and is readily accessible.

The release valve is separate from the pump. By turning the release valve, the load is automaitcally lowered rapidly or slowly as desired. The load is under constant control and can be raised or lowered to within 1/1000 of an inch of the desired point, according to the manufacturers.

The jack is provided with a by-pass to prevent the plunger from being raised beyond safe limits. Heavy duty jacks are equipped with two pumps, one low pres-

THE "UNITED" POLISHED ROD SCREW HANGER

THE "United" Polished Rod Screw Hanger consists of a cast steel "T" head having trunnion bearings that rest on the walking beam of a pumping well. Two frame bolts suspended from the "T" Head support a cast steel "Carrier," which in turn supports the Tubular Adjusting Screw. The Polished Rod Swivel Bearing rests on the top end of the Tubular Adjus ing Screw and supports the Polished Rod Socket Grip. The Tubular Adjusting Screw is provided with a Handle Bar for use in making adjustments.

The Polished Rod passes up through the Tubular Adjusting screw and Swivel Bearing and is held by the Socket Grip. The United Polished Rod Screw Hanger provides all the adjustments on a pumping well that a Temper Screw affords on a drilling well. The valves can be "BUMPED" or "SPACED" while the Walking Beam is in motion by taking up or letting out on the Tubular Adjusting Screw. In wells where Standing Valve Pullers are used the Standing Valve can be unseated by lowering the plunger or working valve, bearing the "PULLER" into contact with the Standing Valve and taking up on the Adjusting Screw. Sucker Rods that have unscrewed can be connected up by the same operation. The Swivel Bearing on the top end of the Adjusting Screw permits the free rotation of the whole string of sucker rods in either direction.

THE "UNITED" POLISHED ROD HANGER

The United Polished Rod Hanger is the same construction as the Polished Rod Screw Hanger except that the adjusting screw is omitted. It provides for free rotation of the Polished Rod and when used in connection with the Polished Rod Swivel Bearing and Socket Grip, it makes a hanger of convenience, strength and simplicity. It can be converted into a polish rod screw hanger by removing the bushing from the carrier and adding an adjusting screw and handle bar.

Manufacturers of RIG IRONS and STEEL EQUIPMENT STEEL TANKS DRILLING MACHINES SWAB BARRELS

CIRCULAR UPON REQUEST

UNITED
IRON WORKS, Inc.
Kansas City, Mo.

Sales Offices
TULSA, OKLA. 134 N. Rosedale
DALLAS, TEXAS Magnolia Bldg.

"UNITED" IRON WORKS INC. FOR SERVICE

NO REPLACING

"UNITED" EXHAUST PIPES AND PITS

THE troublesome features of replacing steel exhaust pipes and the unsalvageness of concrete exhaust pits, have been overcome by the development of the "United" articulated exhaust pipe and positive gas expelling safety exhaust pits.

SAFETY INSURED

"United" exhaust pits are provided with expansion joints at tangential intake of the exhaust pit. This tangential intake conveys the exhaust gases into the pit and gives them a whirling effect, thereby completely expelling them by the initial velocity of incoming gases. Explosion doors placed on the conical roof permit easy opening in the event of explosion. Heavy flanges on roof permit secure anchoring of stack.

"United" exhaust pipes and pits are made of a high manganese cast iron mixture and therefore have a high heat and rust resistance—not found in ordinary cast iron. Additional information on request.

UNITED
IRON WORKS, Inc.
General Office:
KANSAS CITY, MO.

TULSA, OKLA. 114 N. ROSEDALE
SALES OFFICES:
DALLAS, TEXAS, MAGNOLIA BLDG.

"UNITED" IRON WORKS INC. FOR SERVICE

sure speed pump to raise the plunger quickly to the point of contact, and one high pressure pump to carry the load.

These jacks are made in capacities ranging from one and one-half to 75 tons. Further information will be supplied by request from the company.

Hydraulic Lift Pump

T. J. WOOD ET AL

An hydraulic lift pump for pumping deep wells has been developed by T. J. Wood and associates of Tulsa that has a controlled stroke, direct application of power to the polish rod and reduces whip and vibration to a minimum as shown by field tests. The pull or load on the engine or power of the pumping unit also can be controlled in proportion to the amount of fluid to be handled and the depth lifted.

A standard pump is utilized as the power for the Wood pumping unit that has variable displacement control and may be driven from any constant source of speed such as gas engine, steam engine or electric motor. All speed variations in pumping are made by a screw adjustment on the control of the pump. The pump is direct connected to a long stroke hydraulic cylinder by means of two pressure lines as shown in the accompanying illustration, the cylinder being mounted horizontally. A piston rod extends from each end of the hydraulic cylinder, one being connected by wire line over a sheave to the polish rod and the other over a sheave by wire line to the counterweight which is made to almost exactly balance the weight of the rods and fluid in the tubing. There is no bending of the rod at any point in the stroke as the pull is straight up from the stuffing box at all times.

The length of the stroke is controlled by stops that travel along with the piston rod of the hydraulic cylinder and the operator obtains the exact length of stroke desired by adjusting the stops. The length of stop at the end of each stroke and the rate of acceleration and slowing down are controlled by a small needle valve located on the hydraulic control of the pump. An hydraulic pressure gauge connected into the pressure lines leading to the hydraulic cylinder provides a means of checking the forces acting on the rods at all times and also indicates to the operator the condition of the traveling plunger and working barrel, for if the tubing does not fill, the pressure drops off and if the working barrel fills with mud and stops the plunger on the down stroke, or if the traveling plunger sticks in the barrel on the down stroke the pressure on the down stroke increases immediately when the resistance it met. As there are no circular motions whatever in the pumping action it is possible to provide a counterweight that will act efficiently at all times and that exactly balances the weight of both the rod and the fluid in the well.

The pumper is automatically protected from overload and is automatically lubricated under high pressure.

Further information and data may be obtained by communicating with T. J. Wood and associates, Mid-Continent Building, Tulsa.

Low Pressure Gas Burner

WEBSTER ENGINEERING COMPANY

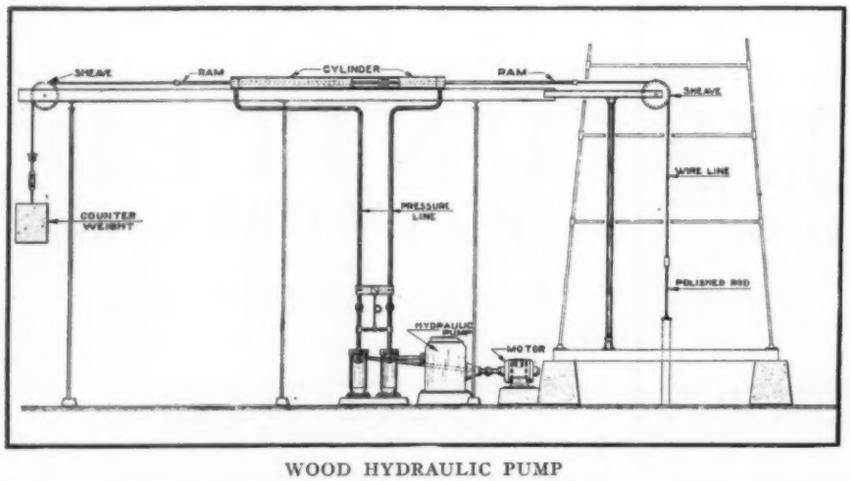
The Webster low pressure gas burner is particularly adaptable to oil country boilers and has already been thoroughly tested out in the field and proven satisfactory. It is manufactured and sold by the Webster Engineering Company of Tulsa, of which W. W. Webster is president. He is also designer of the burner.

The Webster burner is of the box type, the box being placed under the boiler with the grates facing upward. Dirt is banked around the outside of the pan after the burner has been placed under the boiler so as to exclude all the air except through the burner proper.

These large number of X shaped openings in the grates produce a large, soft fire that is easy on the fire box and flues and allows the boiler to operate at high rating with high efficiency.

The Webster burner is made in two sizes: No. 1 with 48 jets and No. 2 with 80 jets. The No. 1 size is for the average field boiler and the No. 2 for large field boilers used in rotary work.

Further information may be obtained by communicating with the company direct.



WOOD HYDRAULIC PUMP

BRADEN WINCH

New Braden Winch

BRADEN STEEL AND WINCH COMPANY

Braden Steel and Winch Company, Tulsa, has perfected a new truck winch.

This device is mounted on one of the rear wheels, but it revolves independently of the wheel on a special hub. A sliding clutch engages the rear axle with either the wheel or the winch, as desired. When the axle is engaged with the winch, the winch may then be driven by the truck motor, forward or reverse, while the truck itself stands stationary with all four wheels on the ground.

The winch is said to be limited in its capacity for handling heavy work only by the strength of the steel cable used.

Various attachments widen the field of usefulness of the winch. It can be furnished with permanent capstan head instead of a reel, or it can be converted into a capstan by attaching the Braden removable cathead. With belt pulley attachment, it can be used for driving machinery either mounted on the truck bed or stationary.

Types are now being manufactured for practically every make of truck.

Further information can be had by communicating with the company.

Combinex Equipment

CHARLES N. HOUGH MANUFACTURING COMPANY

Charles N. Hough Manufacturing Company, Franklin, Pennsylvania, announces the Combinex ball and seat for use in wells where excessive lodestone is encountered.

This product is a combination of two Hough units, Steelex and Bronex balls and seats. The seat is a Steelex and the ball is Bronex.

Further details can be had upon request to the company.

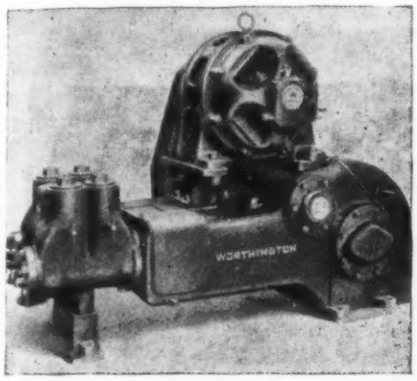
New Model Pumps

WORTHINGTON PUMP AND MACHINERY CORPORATION

Worthington Pump and Machinery Corporation, 115 Broadway, New York, has perfected a number of new additions to its line of pumps and compressors during the past nine months.

Horizontal Duplex Power Pump

The horizontal duplex power pump is adapted to gathering service in oil fields, allied service of practically any character, and for general power pump service.



WORTHINGTON HORIZONTAL DUPLEX POWER PUMP

This pump is characterized by rugged construction, dust and sand-proof design of the power end, positive self-oiling qualities, and semi-portability.

Practically any drive arrangement can be furnished.

The power end is of the horizontal duplex double-acting enclosed self-oiling type; frame, crosshead guides and bearing supports are cast integral. Connecting rods and gearing are located between main bearings.

The power end can be applied to Worthington liquid ends of Snow type now in the field.

Enclosure of all running parts and flood lubrication insures smooth, quiet, operation.

The frame is a one-piece casting. The crankcase provides an oil reservoir for flood lubrication.

A grey iron hood makes a dust and oil-tight joint over the crankcase and space occupied by crank shaft, gear, and connecting rods. Access to power end, when necessary, may be made by removing this hood or cover.

Pinion shaft bearings and main bearings carried in the frame, are lined with anti-friction removable shells, readily removable for inspection, or for replacement.

Connecting rods are steel, of marine type.

Crossheads are of large diameter, grey iron, ground to size.

The crank shaft is a one-piece open-hearth furnace annealed steel casting of the two-throw type with cranks at 90 degrees.

The main gear and pinion are supported between main bearings.

The enclosed crank-case provides a large oil reservoir for flood lubricating system. Rim of the main gear, dipping in lubricant, carries oil to the top of the crankcase, whence it is distributed generously to all bearings. All moving parts run in a bath of oil. Oil overflowing from the bearings is automatically returned to the crankcase and is used over and over again.

Means are provided for draining the crankcase.

There is provided in the frame a diaphragm containing a substantial felt oil wiper, held in place by a readily removable retaining plate. The wiper prevents loss of lubricating oil from the enclosed power end.

Where the method of drive requires a double reduction of gear, a suitable gear guard of sheet metal substantially reinforced is provided.

Horizontal Duplex Power Pump, Deane Type

The Deane Type horizontal duplex power pump is similar to the Worthington. It has the totally enclosed power end, is flood lubricated, has double-acting pistons and is built in capacities ranging from 1455 to 6685 barrels per 24 hours.

Horizontal Triplex Power Pump

The horizontal triplex single acting enclosed crankcase power pumps are adaptable for general service for capacities from 38 to 108 U. S. gallons per minute, and pressures up to 500 pounds under an operating speed of 200 revolutions per minute, with a six to one gear ratio. This makes the pumps desirable for direct connection to 1200 revolutions per minute motor or engine.

The pumps are built for standard requirements handling non-corrosive liquids. For other services as required the liquid end can be cast separate from the power end, and the parts coming in contact with the liquid can be of such non-corrosive metal as the requirements may demand.

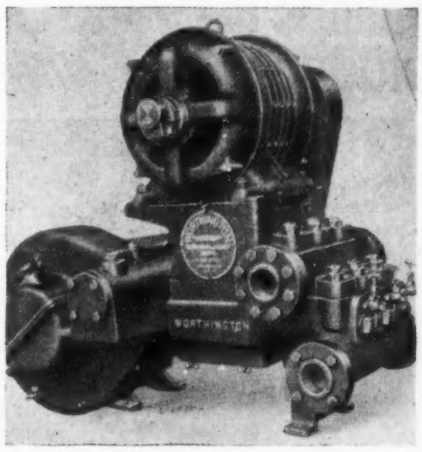
Horizontal Duplex Piston Pattern Pressure Pump

The horizontal duplex piston pattern pressure pump is designed for field and general service.

Steam end specifications:

Steam cylinders and heads are of close grain cast iron.

Cradles are semi-circular type, cast integral with the steam cylinders.



WORTHINGTON HORIZONTAL TRIPLEX POWER PUMP

Seam valves are of the slide valve type with inside adjustment, operated by direct lever connections.

Steam pistons and rings have bodies of cost iron, one-piece construction. Each piston is fitted with two self-adjusting iron packing rings.

Piston Rods. Steel, split type. Each section threaded and screwed into cast steel split crosshead.

Valve Gear. Duplex type supported by cast iron cross stand with large bearings for rockshafts. All levers, links, rockshafts and cranks of steel of one piece construction. Spool and valve gear pins of steel.

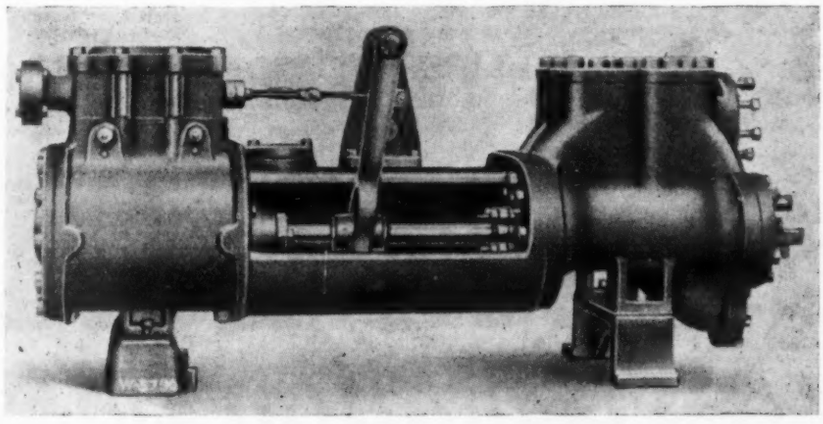
Stuffing Boxes and Glands. Piston rod stuffing boxes, bolted type with studded glands. Boxes and glands not bronze bushed. Valve rod stuffing boxes cast integral with steam chest with studded glands. Valve rod boxes and glands not bronze bushed.

Companion Flanges. Cast iron, tapped U. S. standard pipe threads, furnished for steam and exhaust openings.

Liquid end specifications:

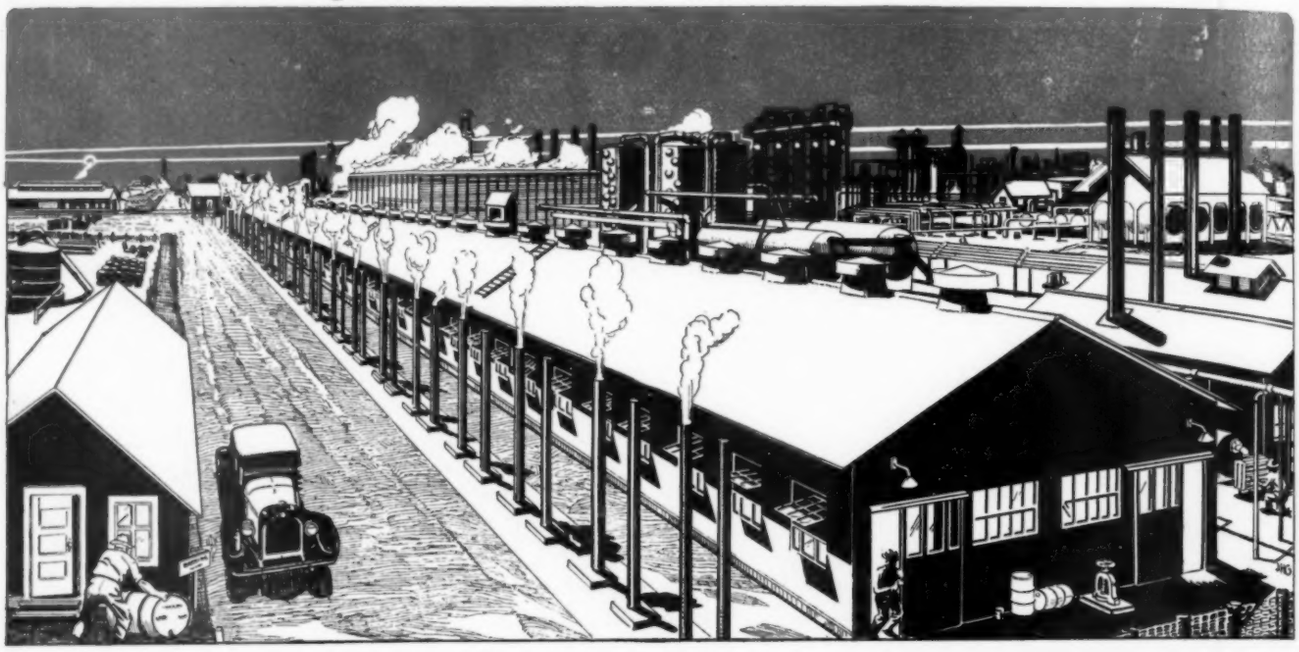
Type. Duplex inside packed piston "Snow Type" with suction and discharge valves above pistons; bolted valve pot covers.

Liquid Cylinders and Heads. Cylinders close grain cast iron having valve pots cast integral. Liquid passages short direct and of ample area. Valve pot covers



WORTHINGTON HORIZONTAL DUPLEX PISTON PATTERN PRESSURE PUMP

Phillips own and operate 44 Natural Gasoline Plants—and produce *One-Eighth* of the world's output of Natural Gasoline



A MESSAGE TO JOBBERS

Re: Natural Gasoline

PHILLIPS Aviation Gasoline is serving aggressive modern jobbers in three ways:

FIRST: For blending with ordinary gasoline to produce a high grade winter motor fuel.

SECOND: For selling "straight", as a *super* winter gasoline.

THIRD: As an unexcelled *aviation* gasoline. Art Goebel used Phillips Gasoline in his victorious flight from San Francisco to Honolulu, in the Woolaroc.

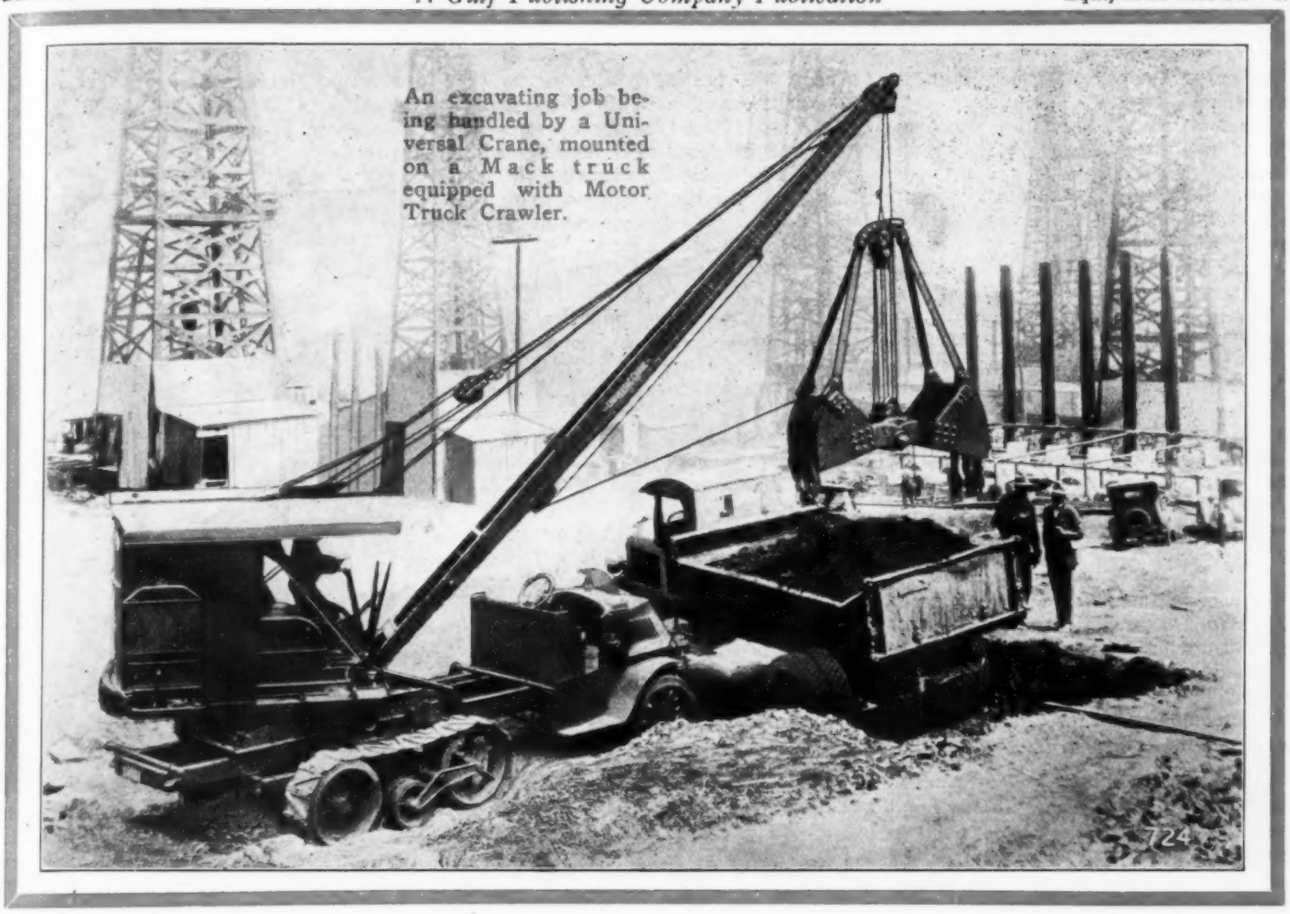
We are now shipping FUEL OIL and GAS OIL from our Borger, Texas, Refinery. Ask for quotations.

New Administration Building, Phillips Petroleum Company

PHILLIPS PETROLEUM COMPANY
BARTLESVILLE, OKLAHOMA

PHILLIPS
Aviation Gasoline

Say you saw it in The OIL WEEKLY



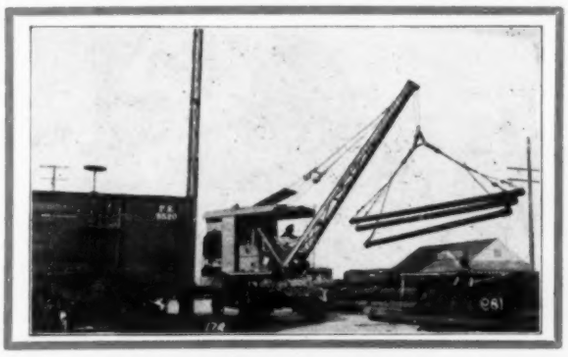
An excavating job being handled by a Universal Crane, mounted on a Mack truck equipped with Motor Truck Crawler.

50% Saving When Cleaning Sumps with a UNIVERSAL CRANE

FROM the Huntington Beach oil fields of California comes the report of a Universal Crane cleaning out a sump hole—loading all materials into trucks and showing a 50 per cent time saving over the usual methods.

Other applications of the Universal, which easily does the work of 20 to 30 men at the cost of 3 to 4, are unloading and stacking pipe and oil well casing; loading pumps, machinery and all heavy lifts about store yards; excavating drainage ditches; cleaning sumps; building sump berms, etc.—in fact it handles any job where clamshell or dragline buckets, trench hoe, backfiller, post hole drill, or hook block can be used.

The Universal is a full revolving, one man operated, gasoline powered crane of 5 to 10-ton lifting capacity, mounted on a 5-ton or heavier capacity motor truck to give it 100% speedy mobility.



Unloading and stacking oil well casing, three lengths per trip.

Even soft, filled, rain or oil soaked, uneven ground can be readily traveled by means of the Universal Crane Motor Truck Crawler as illustrated above, which is an 8-wheel, fully rubber tired truck, convertible in approximately 15 minutes into a High Speed Crawler rear end that takes the Universal anywhere at truck speeds.

Roads or no roads—rain or shine—mud or muck—hard or soft ground, the Motor Truck Crawler, gives you 100% mobility — and ability to use this speedy economical crane on all types of widely scattered jobs—on routine or emergency jobs. It's like having a crane anytime, anywhere.

Bulletin No. 544 describes the motor truck crawler applied to cranes exclusively by Universal. Write for it!

The Universal Crane Company

926 Swetland Bldg., Cleveland, Ohio

UNIVERSAL CRANES

Say you saw it in The OIL WEEKLY

bolted on. Cylinder heads close grain cast iron separate type.

Cylinder Liners. Cast iron removable type unlined, held in place by three bolts extending through cylinder heads.

Valve Seats. Bronze, forced into decks on smooth taper. May be refaced without removing from valve pots.

Liquid Valves. Bronze, bottom wing guided type having four wings to prevent cocking, carefully turned and faced to fit seat. Each valve held in place by coiled bronze spring of proper tension.

Liquid Pistons. Body and follower type fitted to piston rod on smooth taper and held by two nuts. The packing consists of cast iron (inner) ring and two cast iron (outside) packing rings.

Stuffing Boxes and Glands. Stuffing boxes bolted type fitted with studded glands. Boxes and glands not bronze bushed.

Companion Flanges. Cast iron, tapped U. S. standard threads, furnished for suction and discharge openings.

Gaskets. Oil proof gaskets furnished for all joints.

More details on all these items is available from the company, by request.

Centrifugal Pump

In designing the new centrifugal pumps, special attention was paid to securing a smooth flow in every part.

The pump casing, of cast iron, is split on a horizontal line with suction and discharge nozzles cast in the lower half. The joint between halves is sealed by an especially prepared oiled paper gasket.

The suction passage to the eye of the impeller is made in the form of a nozzle.

The impeller in both the single-suction and double-suction pumps is of the enclosed type and made of bronze. In single-suction pumps, the back of the impeller acts as a hydraulic balance. The hub is made extra long. A feather key secures the impeller to the shaft.

Impeller bushing rings are made of special material.

The shaft is made of heat-treated steel. Sleeves are secured in lateral position by external lock nuts and the impeller key is extended into the hub of the shaft sleeves to prevent slippage.

The shaft is supported on two deep groove ball bearings. Bearing brackets are cast integral with the lower half of the pump. Each bearing operates in a one-piece hardened-steel housing held in place by a yoke. By removing the housing yokes, the shaft complete with bearings and bearing housings can be removed from the pump as a unit.

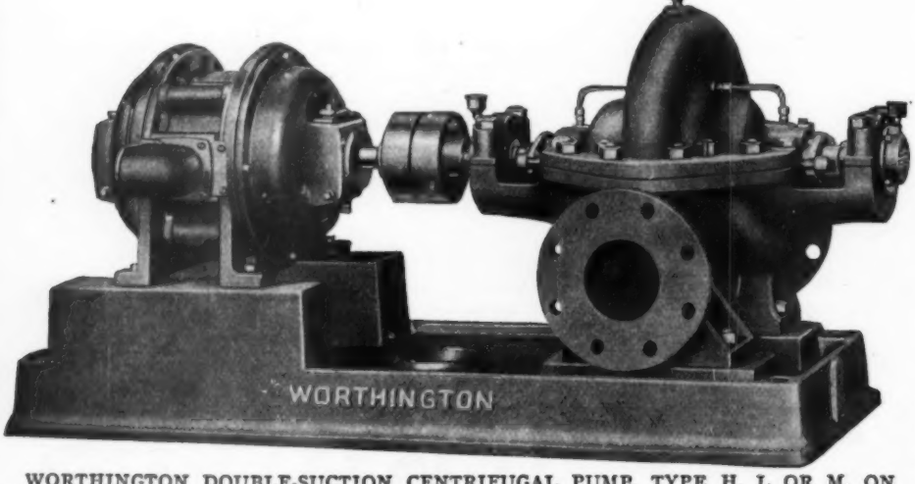
It is necessary to lubricate this pump once every three or four months.

Stuffing boxes are of extra depth to prevent air leakage. The glands are made of bronze and are secured with bronze swing bolts. Each stuffing box contains five rings of packing and a water-seal gland. An automatic choke in the pipe connections from the water-seal glands to the discharge of the pump takes the place of valves.

The standard bedplate is of box section. It is provided with a raised lip, sloping top and drain. Any leakage that may occur is thus drained off. Bedplates for direct-connected motor-driven units are designed to take standard motors.

A flexible coupling of the rubber-bushing-and-pin type is supplied with each direct-connected unit.

All component parts of the pump are made to accurate measurements, insuring interchangeability.



WORTHINGTON DOUBLE-SUCTION CENTRIFUGAL PUMP, TYPE H, L OR M, ON BEDPLATE WITH MOTOR.

Recording Device

AXELSON MACHINE COMPANY

To assist in making permanent records from its load indicator, Axelson Machine Company, Los Angeles, has devised a recording instrument to operate in conjunction with the hydraulic load indicator.

The new recording device makes unnecessary the constant observation by eye over long periods of time.

The mechanism is of special construction. Reproduced curves are obtained as a result of the application of a movable chart operating at variable speeds up to six inches per minute. Observers can thus obtain an actual record over any given period.

The point of rod and fluid pick up is indicated by the interruption taking place on the inked chart. Maximum and minimum loads are also noted, according to the manufacturers, and likewise any intermittent impact stresses that may take place, due to gas, water, excessive speed and tubing or rod friction.

AXELSON LOAD INDICATOR

Standing Valve

A new standing valve is being introduced by the Axelson Machine Company, called the E-Z Pull.

AXELSON STANDING VALVE

The valve cage and body are integral and the exterior of the body tapers immediately from the cage openings so that no recess is formed between the cage and barrel. When pulled the valve lifts off of the taper seat.

Breather Tank Roof

CHICAGO BRIDGE & IRON WORKS

Chicago Bridge & Iron Works, 37 West Van Burean Street, Chicago, Illinois, is distributing information on the Wiggins Breather Roof, a new device recently developed by John H. Wiggins.

It is claimed that the Wiggins breather stops evaporation by providing a variable gastight volume to take care of expansion and contraction of the air-vapor mixture above the oil without allowing any of the vapor to escape.

The Wiggins Breather may be constructed on old or new steel tanks in somewhat the same manner as an ordinary gastight steel roof. The steel plates are welded together and to the top of the tank shell, but are not fastened to the supporting framework. The distinctive feature of the Breather is that the roof framework is designed so that the roof, when resting on it dips below the top of the tank shell and forms an inverted frustrum of a cone.

During the night, the Breather roof on a tank full of oil is in its down position and is resting on the roof framing. As soon as the sun warms the air-vapor mixture above the oil, this mixture expands. Instead of some of the mixture being forced out of the tank, the roof flexes up enough to provide additional volume for expansion. The Breather keeps rising slowly until the hottest part of the day and then when the mixture cools and contracts it returns slowly to the down position. No vapor is allowed to escape at any time.

The Breather is equipped with a vacuum relief valve and volume relief for filling and emptying, and for emergencies. The vacuum relief is a liquid sealed vent of improved design. The volume relief valve is a mechanically operated valve which opens when the Breather reaches its maximum upper operating limit.

Additional data will be supplied from the company on request.

Ohio Tracktruck

TRACTION MACHINE COMPANY

The Traction Machine Company, North Baltimore, Ohio, is now marketing the Ohio Tracktruck.

The outfit is powered by a Fordson.

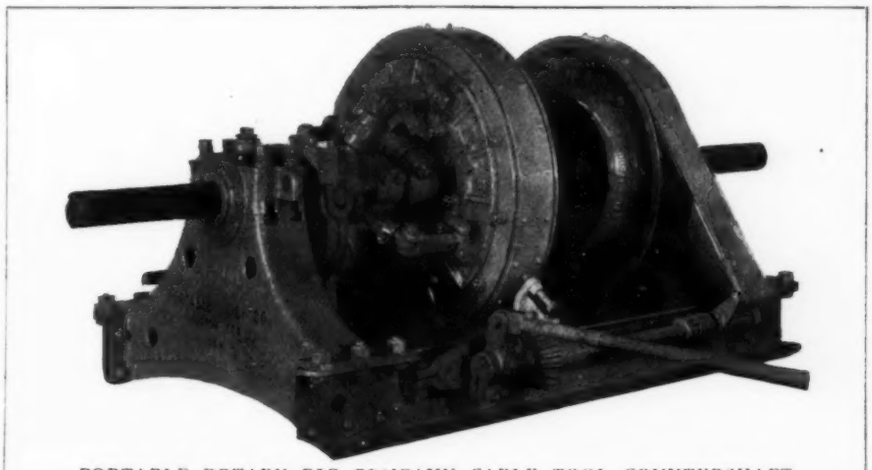
The main frame and rack are of eight-inch heavy channel. Frame and rack are reinforced by cross pieces and angle ties. This frame is supported from the rear axle at four points. Four lateral members and five cross members of eight-inch channel make up the main frame and rack. The rear axle is of sufficient size to carry a capacity load with a large safety factor.

The rack is provided with a floor of planks securely bolted to the rack cross members.

The treads are of pressed steel throughout, assembled by cold riveting. Treads are so constructed that lugs can be attached to them easily. Link pins are of large size and are heat treated to give maximum wear.

Bearings are equipped with Alemite fittings.

More information will be provided by the company, on request.



PORTABLE ROTARY RIG COMPANY CABLE TOOL COUNTERSHAFT

New Steel Fittings

STOCKHAM PIPE AND FITTINGS COMPANY

Stockham Pipe and Fittings Company, Birmingham, Alabama, announces that it is now manufacturing steel fittings for use with superheated steam, hot oil, high pressures and high temperatures. This company formerly made only cast iron fittings.

These cast steel flanged fittings are designed in accordance with the tentative American Standard for steel pipe flanges and flanged fittings as developed by the American Engineering Standards Committee.

Classifications are given below:

Series 15—150 pounds working steam pressure. Dimensions are based upon the American 125 pounds cast iron fittings standard with exception of thickness of body of fitting, which is designed with ample factor of safety for this series 15.

Series 30: 300 pounds working steam pressure.

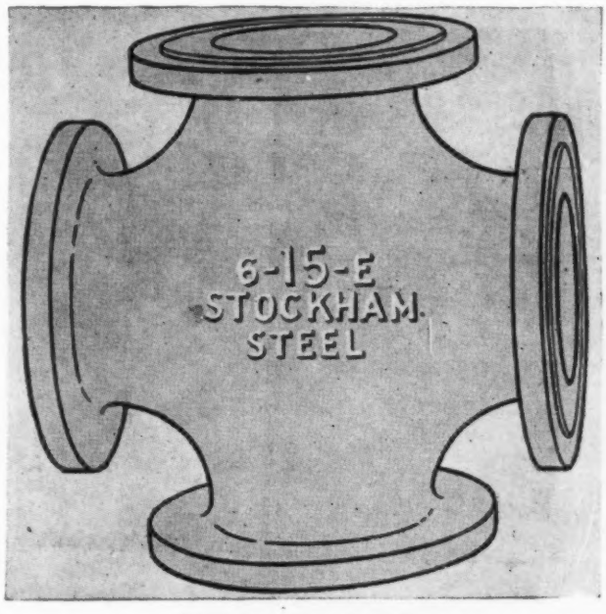
Series 40: 400 pounds working steam pressure.

Series 60: 600 pounds working steam pressure.

Series 90: 900 pounds working steam pressure.

Series 135: 1350 pounds working steam pressure.

Additional information on these fittings will be provided by the company, on request.



STOCKHAM STEEL FITTING

Portable Cable Tool Rig

PORTABLE RIG COMPANY, INC.

The Portable Rig Company, Inc., Houston, has recently added a new extra heavy super-duty reverse clutch cable tool counter-shaft to its line of equipment.

The units is equipped with Timken tapered roller bearings throughout, and special alloy steel shaft carried in extra heavy cast steel pedestals. Reversing gears are heavy steel cut in cast steel reverse housing ing with 40-inch diameter reverse brake flange. The unit is also equipped with 40-inch diameter independent brake on clutch pulley.

The clutch in this unit is of a new and heavy design. The friction plate can be removed in halves and friction discs can be replaced when necessary without dismantling the clutch proper.

The belt pulley on the clutch can be removed in two halves and replaced with a split sprocket for using the unit for rotary work, which is also

accomplished without dismantling the unit.

The outfit is equipped with standard 50-inch flywheel equipped for extra balance rims which can be bolted on and used as required by the operator.

Detailed specifications can be had from the company, on request.

New Star Outfits

STAR DRILLING MACHINE COMPANY

The Star Drilling Machine Company, Akron, Ohio, has placed two new units on the market recently, both of which are adapted to heavy lease maintenance work.

Combination Machine

The number 65 Star combination rotary and cable tool machine was designed for handling 2500-foot drilling with four-inch drill pipe.

With the super tractor attachment, the machine can be moved as an assembled unit under its own power. The outfit has ample power to pull a trailer carrying pump unit. The machine is backed up to a 20-foot base derrick and the frame of the machine placed on the derrick. With the tractor drive chain disconnected, the machine is read yto start threading up the blocks.

The machine is powered by a four-cylinder, 100 horsepower engine which can be operated on gasoline or natural gas. The jack shaft, clutch shaft and hoisting drum shaft are mounted on Timken roller bearings.

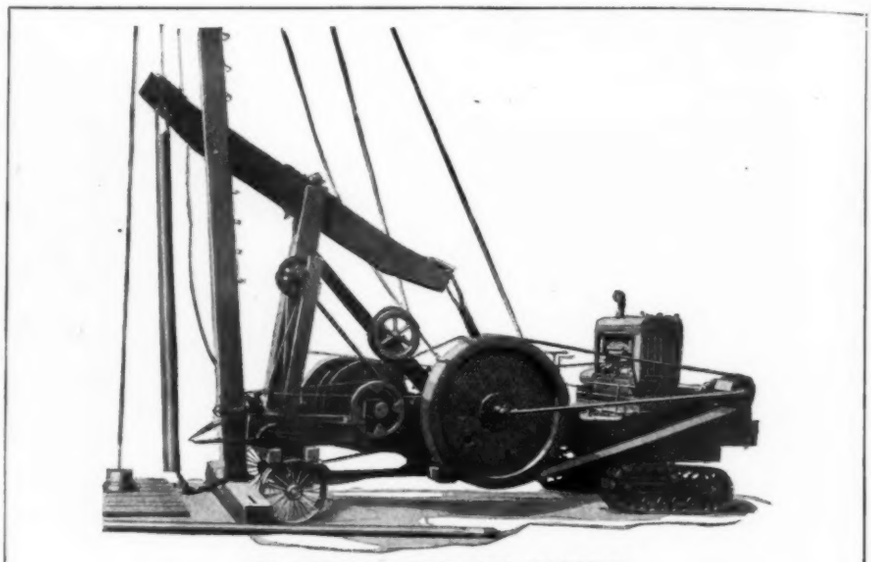
Operation of the draw-works is identical to the standard steam rotary. Heavy duty friction clutches provide for reverse without jar on the machine. The draw-works has four speeds, insuring ample power for handling long string of drill pipe and casing.

The outfit can be equipped with cable tool attachment, a feature which permits changing the method of drilling at any time.

No. 47ST

The number 47ST machine is recommended for new drilling up to 3000 feet.

The outfit is powered by a four-cylinder gasoline motor, which can also be operated on natural gas. The unit is also equipped with a heavy duty reverse clutch, providing instantaneous reverse for all parts of the machine.



NO 47ST STAR DRILLING MACHINE

Bull wheel and calf reel are chain driven. The sand reel is friction driven from the outside face of the band wheel.

Heavy Duty Spudder

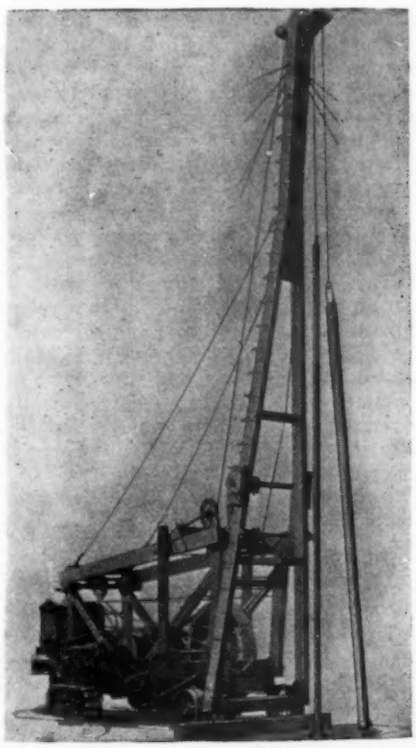
The Star Drilling Machine Company, Akron, Ohio, is now putting on the market the new Star No. 45 ST Heavy Duty Spudder.

Star crawler type wheels with 14 square feet of road contact support the heavier part of the machine. The mast folds back over the machine. The outfit moves under its own power as a complete unit.

The power unit consists of a four cylinder, 60 horsepower engine unit mounted on a structural steel frame. The engine has a heavy duty planetary reverse gear with multiple dry disc clutch forward drive and roller bearing power take-off. Alignment rails under the unit provide for adjustment of tension and line-up on the main shaft.

By means of the reverse clutch controlled from the driller's position, a rocking motion can be given the spudder if desired.

The mast is of single pole top and two leg bottom construction. It folds back over the machine, for moving, and is raised and lowered by power. In addition to supports at the hinges, it is used with mudsill and provided with adjusting screws at the base to give equalized contact with the sill.



STAR HEAVY DUTY SPUDDER

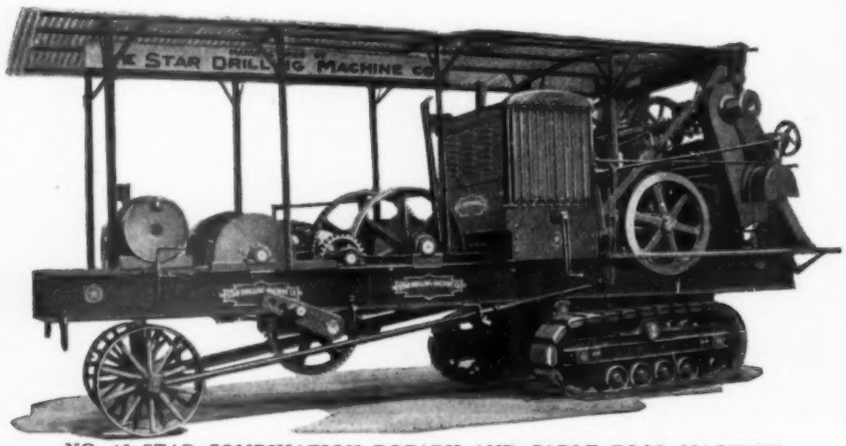
The crown pulley has shaft mounted in brass bearings.

The spudder is of improved Jack type, twin-pitman, driven from four hole cranks giving a maximum 42-inch stroke.

The chain driven bull reel is engaged by an all-metal internal expanding clutch.

A chain driven sand reel engaged by an all-metal, internal expanding type clutch is part of the equipment on the outfit.

A chain driven calf reel with band



NO. 65 STAR COMBINATION ROTARY AND CABLE TOOL MACHINE

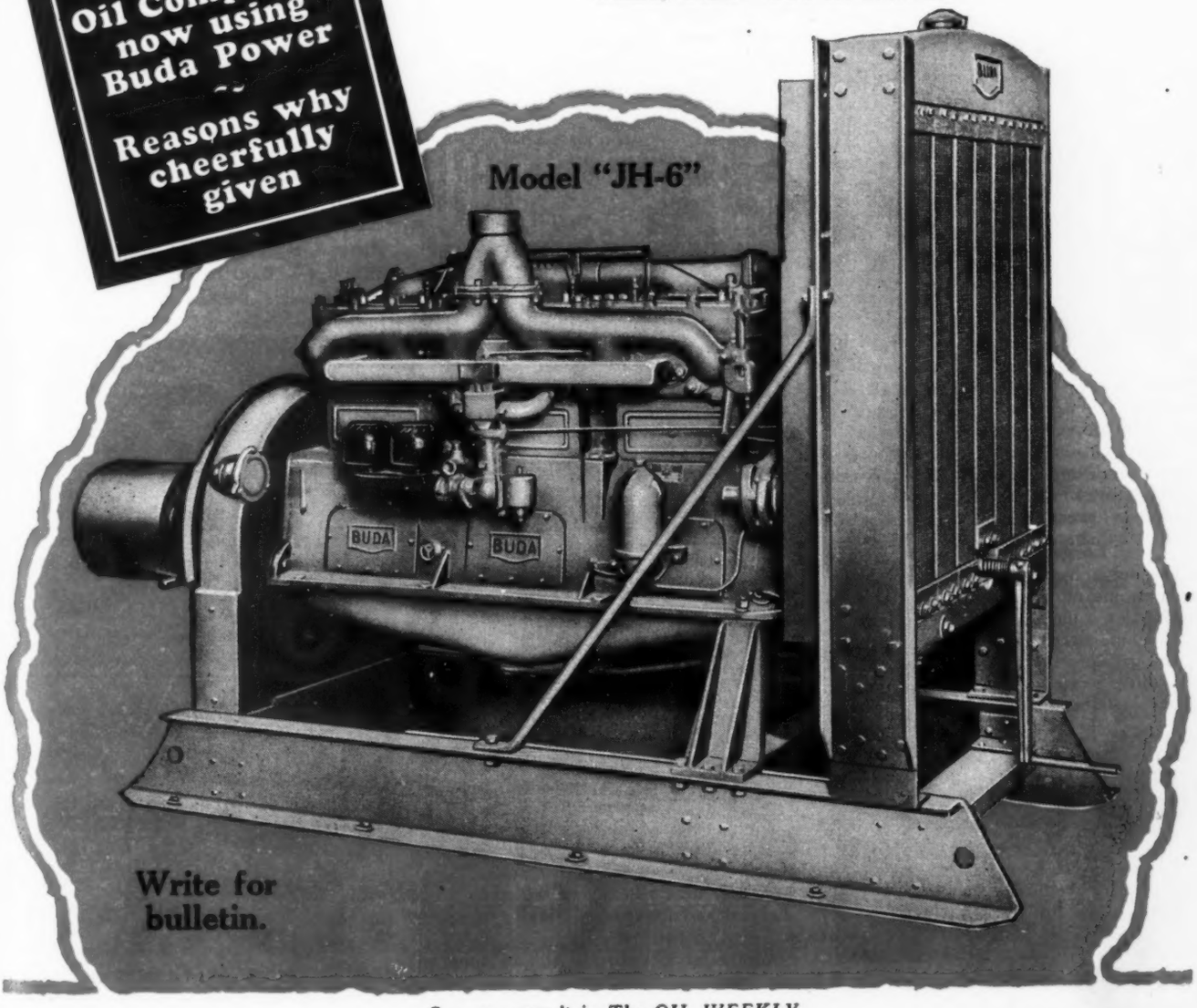
BUDA

—the oil field power

for operating Compressors—Gas-Air Lift and other heavy continuous duty equipment. Made in 75-85-135 H. P. sizes—for operation with gasoline or natural gas. Adapted to either stationary or portable installations and for any type of drive.

THE BUDA COMPANY
Established 1881
HARVEY, [Chicago Suburb] ILL.
Tulsa, Okla. 311 E. 2nd. St.

Over 60 Oil Companies now using Buda Power
—
Reasons why cheerfully given



Write for bulletin.

brake can be furnished as optional equipment.

A new Star type center-balanced underslung walking beam can be furnished, giving the machine all-purpose capacity for any cable tool work, cleaning out and lease maintenance. The beam can be swung to one side and locked from the operator's position when pulling tools and casing.

NO. 44 ST MACHINE FOR LEASE UPKEEP

Drilling Machine for Lease Up-Keep

The outfit is recommended especially for pulling rods, tubing, cleaning out as well as bailing, and is numbered 44ST.

The machine has three forward and three reverse speeds on the bull wheel and three on the reel crank and tractor drive. This makes possible a powerful slow speed for pulling heavy loads and also gives intermediate and fast speeds for bailing.

According to the manufacturers, 80 per cent of the weight of the outfit is carried on the rear crawler wheels. It is moved completely assembled and is therefore quickly rigged up.

The outfit is powered by a four by six four-cylinder McCormick-Deering tractor which will run equally well on gasoline, kerosene, or natural gas.

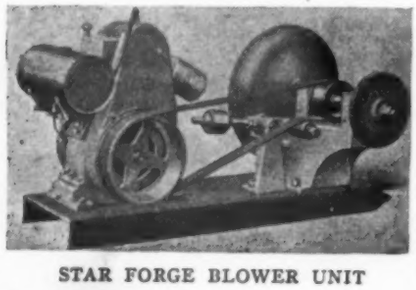
Forge Blower Unit

The outfit has been especially designed for gasoline or electric power. It is assembled on a metal base and can be easily moved and placed close to the forge.

The gasoline type unit is equipped with self-oiling phosphor bronze bearings and balanced cast aluminum fan. The belt pulley is provided with outboard bearing and a belt tightener.

On the electric unit, the blower fan is directly connected to the motor shaft.

A special feature of the blower unit is the shaft extension regularly provided on both the gasoline and electric type for emery wheel or other contrivance.



STAR FORGE BLOWER UNIT

New Injector Products

OHIO INJECTOR COMPANY

The Ohio Injector Company, Wadsworth, Ohio, announces a new line of Garfield locomotive injectors to meet the increasing pressures in oil field work.

The injector is recommended for 250 pounds steam working pressures.

In operation the injector is placed above the highest water level, but the lift should not exceed six to eight feet. Steam is taken from the dome or highest part of the boiler.

Injector for Field Boilers

FIELD BOILER INJECTOR

A special injector for oil country boilers is the Chicago Automatic Injector.

This injector has been widely tried out throughout the Central States and in the Mid-Continent, and is said to be giving excellent satisfaction. Its construction is simple, yet the injector is sufficiently rugged to possess extreme durability and give efficient service.

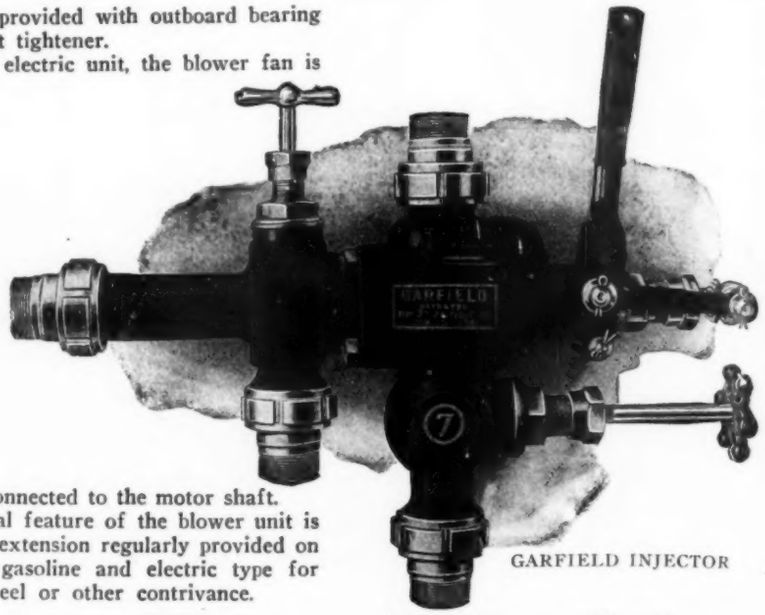
Bronze Bonnet Valve

The company also announces a new line of "O. I. C." extra heavy bronze union bonnet valves for steam working pressures up to 300 pounds.

In this type of valve, the body, bonnet, and union nut are made of special bronze and the stem is of a special stem metal. The disc is of high nickel bronze.

Special points of construction include liberal design in the parts forming the union, full pipe area, large diameter spindles, and heavy hexagons. Spindles are gland packed and equipped with ventilated, non-heating hand wheels.

Additional information will be supplied by the company on request.



GARFIELD INJECTOR

New Lucey Products

LUCEY PRODUCTS CORPORATION

Lucey Products Corporation, 224 East Brady Street, Tulsa, announce two new products for distribution.

Kieley Oil Fuel Governor

The Kieley Oil Fuel Governor is for use in controlling the flow of oil or gas to steam boilers where fluctuation in the steam load on the boilers requires a sensitive operating valve to regulate the flow of fuel and maintain an even pressure.

In the valve the travel of the main disc allows for a full flow of fuel at maximum openings, and at the same time allows for a wide range of flow in accordance with the steam pressure.

The valves are furnished with iron body and bronze seats and discs for pressures up to 250 pounds. Where pressures go beyond 250 pounds, the valves are usually furnished with cast steel bodies and monel or nickel trim.

Depthometer

The depthometer is a patented measuring machine for determining the depth of oil, gas or water wells.

The device is operated by contact on the sand or bailer line. As the line either

LUCEY DEPTHOMETER

goes in or comes out of the well, it passes over a contact wheel on the depthometer which in turn registers a re-set revolution counter the number of feet of line that passes over the contact wheel.

More information on both devices can be had by writing the company.

Baby Pumping Unit

LUFKIN FOUNDRY & MACHINE COMPANY

The Lufkin Foundry & Machine Company, Lufkin, Texas, announces a baby unit of its worm gear pumping outfit, adapted to small wells up to 2500 feet deep. The outfit is especially recommended for service in such districts as West Texas and the Panhandle.

Generally, the baby unit is built along the same lines as the larger units.

A three and one-half-inch alloy steel shaft is used.

The worm gear, a 24-inch, bronze triple thread, has a ratio of 20 to 1. Renewable machined bronze bearings are used in the gear shaft. The worm shaft is equipped with Timken bearings. A suitable flywheel is on the worm shaft. A Trout counterbalanced crank with a balance weight is standard equipment.

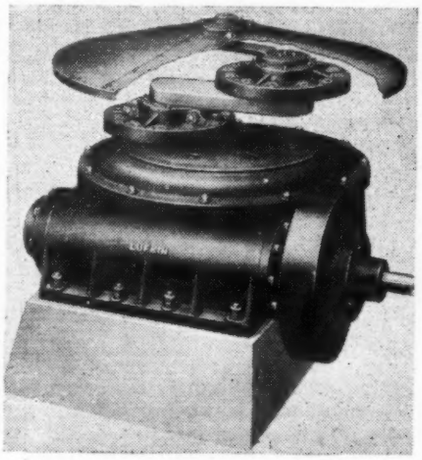
A silent chain drive is provided for motors or gas engine so as to use either 5 by 7½ or 10 horsepower plain induction motor with 1200 r.p.m., or small gas engine.

The sprocket ratio is 2½ to 1 as regularly furnished but can be varied to suit the needs, at a slight cost to the customer. With 1200 speed motors, the cranks will have 23 strokes per minute, strokes 12 to 30 inches long.

Rigid design is used on the walking beam and Sampson post. The beam swivels on posts to clear the well when cleaning out. The horse head of the beam is made to apply to any type of hanger.

The pitman has solid steel ends with solid brass bushed bearings which can easily be replaced when wrong, at slight cost. Ample oiling facilities however, are provided with large reservoirs.

More detailed information will be mailed upon request to the company at Lufkin.



LUFKIN WORM GEARED PUMPING POWER

New Worm Geared Pumping Power

The new Lufkin power was designed to set on a concrete foundation. The lower set of pumping rods are only 24 inches from the ground.

The worm gear is the same as used in the six and one-half inch heavy-duty unit, worm and gear with their bearings interchangeable. The worm gear is 52 inches in diameter, triple thread, 30 to 1 ratio, and turns on a renewable bronze bearing 16-inch diameter, 16 inches high.

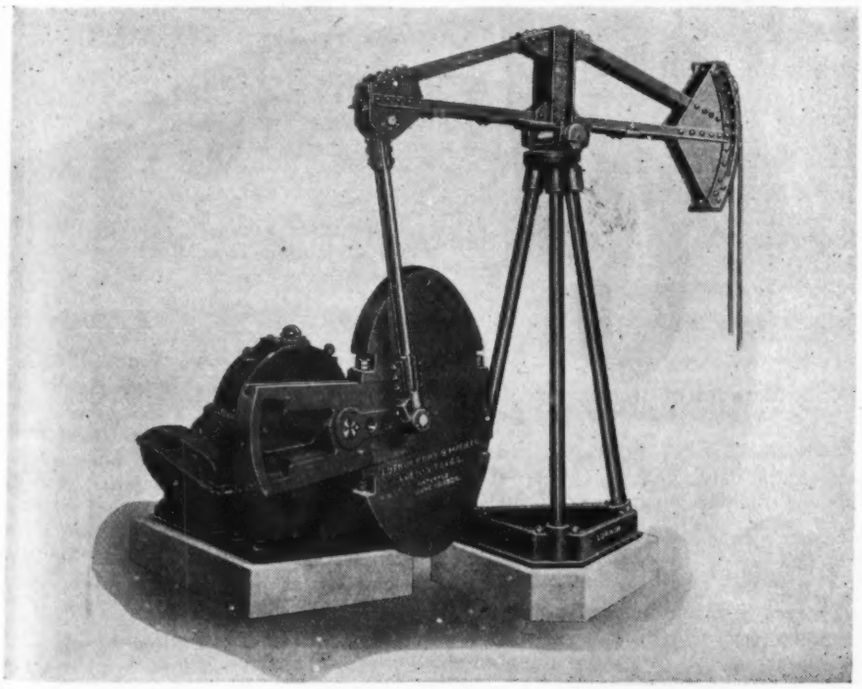
The crank is of cast steel bolted direct to gear center and is made for 24-inch stroke. The crank bearings or pull rod centers are of cast steel also and run on roller bearings, filled with light grease through an Alemite gun. The rod connection holes are bronze bushed and when worn can be replaced.

The umbrella cover keeps off rain.

The line shaft is three and seven-sixteenths inches in diameter and is equipped with Timken bearings.

This power can be operated either with electric motor, four-cylinder gas engine or the single cylinder engine, any of which may be coupled to line shaft as desired.

More information can be had from the company.



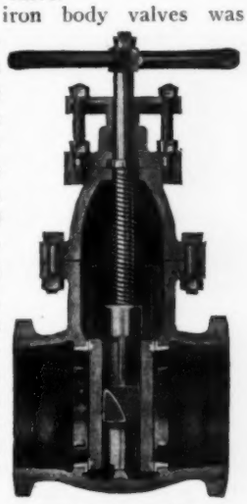
LUFKIN BABY PUMPING UNIT

New Walworth Valves

THE WALWORTH COMPANY

The Walworth Company, Boston, Massachusetts, is introducing a new line of 1600-pound test iron body valves, and the new R. R. brass valve.

The line of iron body valves was brought out especially for the oil industry. The line includes the medium or 700-pound test valve for 175 pounds steam and 350 degrees F., or 400 pounds cold oil, water or gas, and the extra heavy or 1000-pound test valve for 250 pounds saturated steam and 500 pounds cold oil, water or gas.

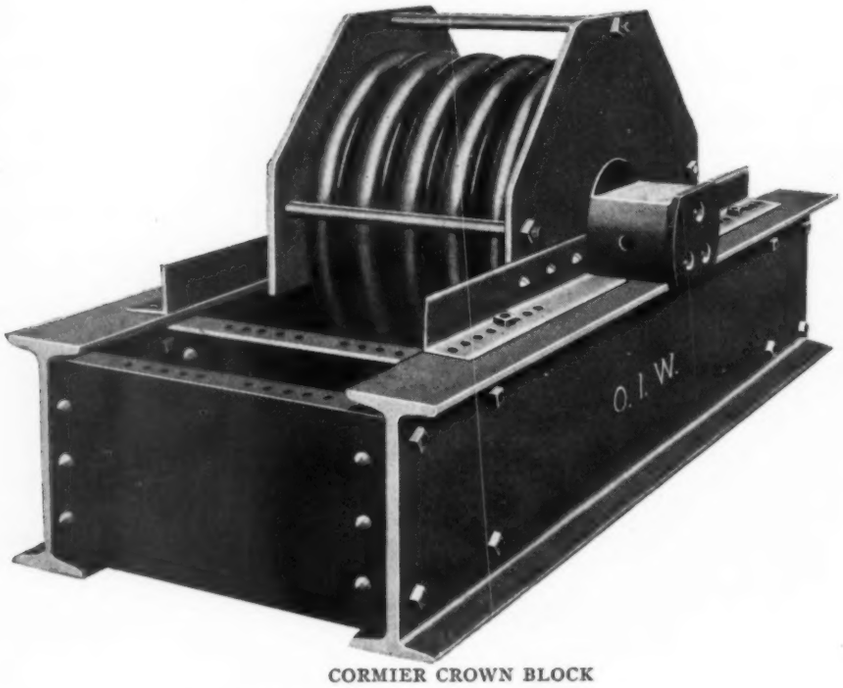


NEW WALWORTH VALVES

Internal mechanism of the valves consists of stem, two discs, one beveled or inclined faced sleeve, and a brass lined spreader. The discs duplicate so that right and left hand discs are not required. The feature of interchangeability is valuable especially on isolated locations.

By the action of the stem which works through the bronze nut cast into the sleeve of the non-rising stem valve, the discs descend between guides cast in the body, parallel to but slightly away from the seats. The spreader strikes a stop in the bottom of the body. The continuing downward movement of the sleeve moving across the highest point of the rounded spreader brings pressure to bear on the back of both discs, thus forcing them apart and squarely against their seats, with the discs directly opposite the valve opening. The first turn of the stem releases the sleeve from contact with the spreader, thereby instantly releasing the discs from their seats, again to be guided slightly away from the seats as they rise.

The valves work equally well, accord-



CORMIER CROWN BLOCK

ing to the manufacturers with pressure on either side of discs and the stuffing box in all sizes, both with rising and non-rising stem. The valves can be repacked under pressure, wide open.

R. R. Valve

The new R. R. valve was designed for use on steam lines carrying a total temperature of 600 dgrees F. at 300 pounds working steam pressure. Walls are of hard bronze, and ample thread chamber enables the valve to withstand vibration. The nickel-copper alloy seat and disc resists corrosion.

Further data can be secured by writing the company.

O. I. W. New Products

OKLAHOMA IRON WORKS

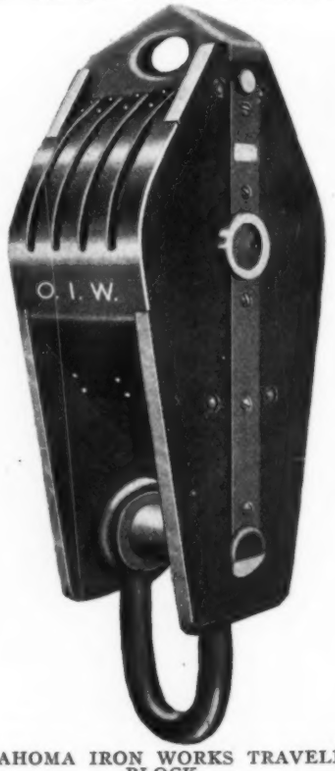
Oklahoma Iron Works, Tulsa, announces several items of new equipment for use in oil field work.

Cormier Crown Block

The Cormier crown block was designed for rotary drilling, but with the addition of two I-beams equipped with bearings and sand sheave pulley, can be converted into the type generally used on cable tool outfits.

The block is constructed of two 18-inch, 90-pound I-beams, each seven feet by four inches in length. These are held together by two box type girders made from channels placed at each end.

The center pin is 12 inches in diameter, so constructed that it helps tie both beams rigidly together. The pin is made from oil heat treated steel and can be used on both sides. The pin also carries five 30 or 34-inch oil heat treated pulleys, according to the desire of the purchaser. These pulleys are equipped with 14½-inch O. D. roller bearings, all of which rotate on the center pin. Each pulley has a separate Alemite oiling system designated by numbers on the end of the center pin. Pulleys are machine grooved.



OKLAHOMA IRON WORKS TRAVELING BLOCK

I-beams are so fabricated that the center pin and pulleys can be shifted to any desired position with little effort.

Approximate weight of the block is 5500 pounds.

Heavy Duty Traveling Block

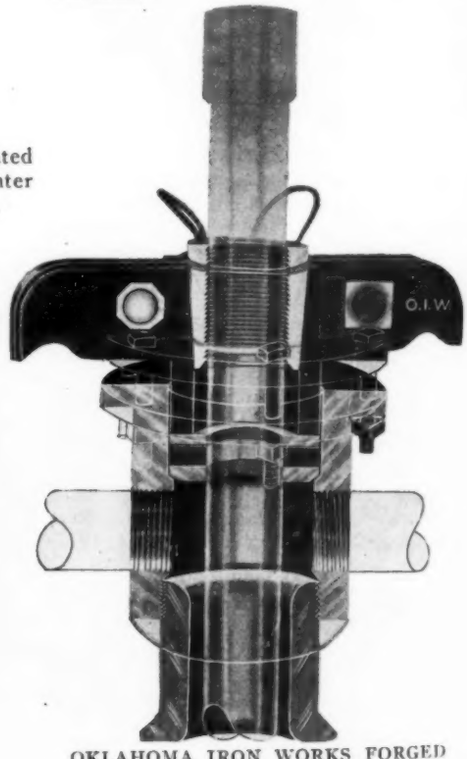
The heavy duty traveling block is manufactured in two sizes: the 66-inch, which weighs approximately 5200 pounds and the 72-inch, which weighs 5800 pounds. The former has 30-inch sheaves and the latter 34-inch.

Sheaves or pulleys are interchangeable with those used on the Cormier block.

Side plates are two inches thick and approximately 32 inches wide. One 12-inch oil heat treated center pin carries four sheaves with 14½ O. D. roller bearings. Sheaves have special machined grooves. Each sheave has a separate Alemite oil system.

The lower pin, six inches in diameter carries a heavy forged steel clevis or pendulum and is heat treated. The lower pin also carries a spool or divider with three grooves. This feature is used for snub line purposes.

The upper pin is also heat treated, is three inches in diameter and carries a heavy cast steel separator for holding plates apart and for attaching a deadline.



OKLAHOMA IRON WORKS FORGED STEEL FLOW HEAD

All three pins are held in place by the Oklahoma Iron Works new feature pin-locking device.

The block is equipped with steel guards.

Cable Tool Crown Block Pulleys

Cable tool crown block pulleys are being made in A. P. I. sizes. One style has a forged steel, oil heat treated shaft with the main body of the pulley pressed on the shaft by hydraulic pressure. The other style is a one-piece pulley, or in other words, pulley and shaft are all a one-piece casting.

Grooves in the pulleys are machined.

Forged Steel Flow Heads

The forged steel flow head is tested for 1250 pounds working pressure and

(Continued on Page 190)

Eventually—
Why Not NOW

USE

Oklahoma Iron Works . .

- O. K. A. P. I. Rig Irons
- O. K. Oil Heat-Treated Drilling and Fishing Tools
- O. K. Cast Steel Fittings, 2500 lb. and 4000 lb. Test
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The Above Is A Partial List Representative of

QUALITY PRODUCTS

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Distributor

INTERNATIONAL SUPPLY CO.
TULSA OKLA.

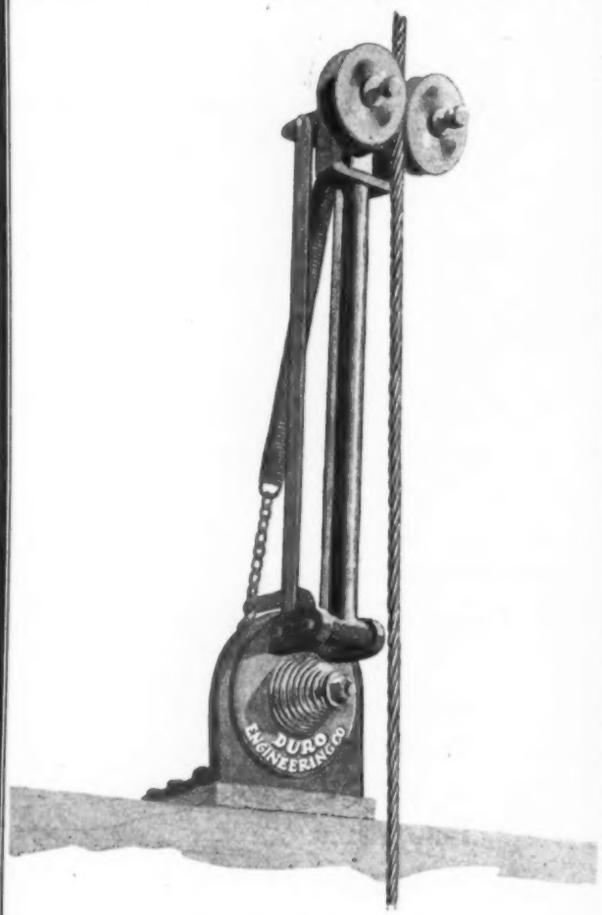
Say you saw it in The OIL WEEKLY

MID-CONTINENT REPRESENTATIVE:

B. & A. SPECIALTY CO.

TULSA, OKLAHOMA

ERWIN LINE SPOOLER



POSITIVE
AUTOMATIC
DEPENDABLE

A positive tension is held on the line and causes it to spool perfectly on the drum. The greatest resistance on the line is exerted on each end of the drum where it is most needed. Wear is compensated for in the clutch plate.

Sheaves are equipped with bronze or ball bearings.

WRITE FOR CATALOGUE OF OUR PRODUCTS

Duro Engineering Co.

BREA, CALIFORNIA

Great Northern Tool & Supply Co.,
Kevin, Montana
Kemmerer, Wyoming,
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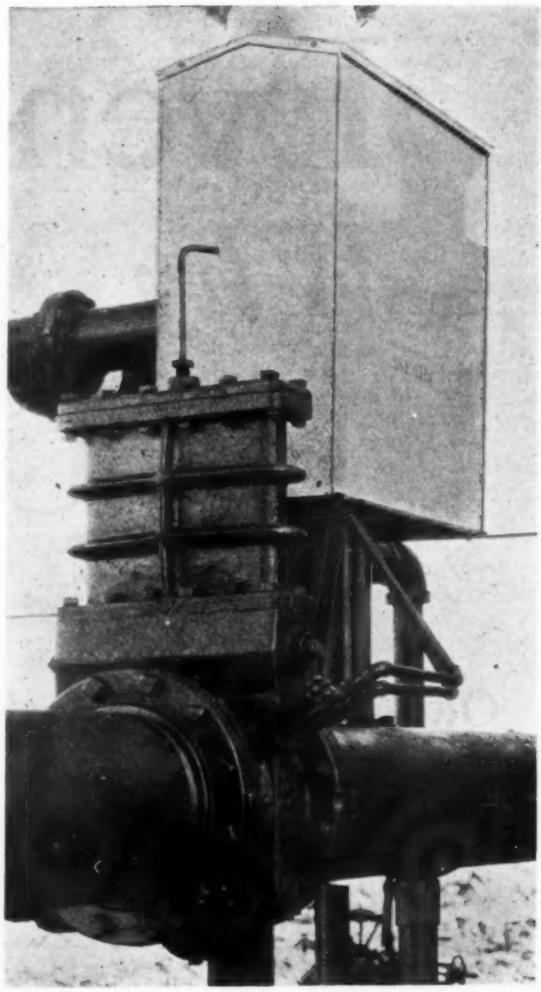

ROBINSON
Orifice Fittings
—why there should be one at every orifice meter

BECAUSE it eliminates by-passing arrangement completely — because the plate can be changed in a few minutes—because flow is not interrupted, nor is there any hazard while change is being made—because the orifice is always centered in the line—because accuracy of measurement is increased and because the gas cannot leak. You can secure these savings and advantages ONLY by using the ROBINSON Orifice Fitting. There is nothing like it! Write for complete details today—ask about its application to the gas lift.

Robinson Orifice Fitting Co.

1435 Santa Fe Avenue **Los Angeles, California**

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Robinson Orifice Fittings

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The most economical and efficient lifting and pulling units on the market.

B & A

Safety Rod Hook.
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The B & A Quality Line is made up of oil field products that have proven their worth on the job. For service, long life with economical operation, you can make no mistake when you specify B & A. Let us furnish you prices and specifications. We also carry a complete line of hoists, concrete mixers, wheelbarrows and woodworking machinery.

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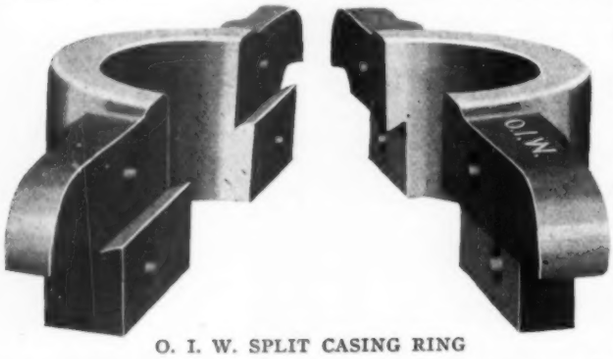
708 Keystone Bldg., Houston, Texas.

can be furnished with forged steel slips for practically any size that will run successfully inside of the head proper. As different size outlets are required by the user, these are made ordinarily either with three or four



O. I. W. SPLIT CASING RING

inch outlets, depending upon the size of the flow head. There are two of the openings in the head. Adapters can also be furnished in connection with the flow heads, so that the same can be used with a control head.

Two-Piece or Split Casing Ring

The split casing ring is manufactured from cast steel or forged steel. In addition to the locking feature the ring is held together by four additional hardened steel bolts, two on each end of the ring. Ends of the ring have ears to accomodate elevator links.

O. I. W. HIGH PRESSURE FITTINGS

High Pressure Fittings

Cast steel tees, Y's, elbows, crosses and flange unions, manufactured in 2500 and 4000 pound tests are being offered by the Oklahoma Iron Works. These are being manufactured either in the straight fitting type or if preferred, the Y's can be furnished in 30, 45, 60 and 90-degree angles with one end machined to take care of a casing head top or ring.

Bell's Swivel Tool Wrench

Bell's swivel tool wrench was designed to use without braces.

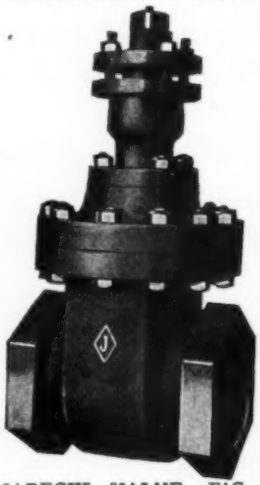
It is said that the handles of the wrench are never beyond a 45 degree angle. This keeps the wrench handles close together with a leverage to make a close fitting joint.

More complete data on all these products will be mailed from the company on request.

New Jarecki Valves

JARECKI MANUFACTURING COMPANY

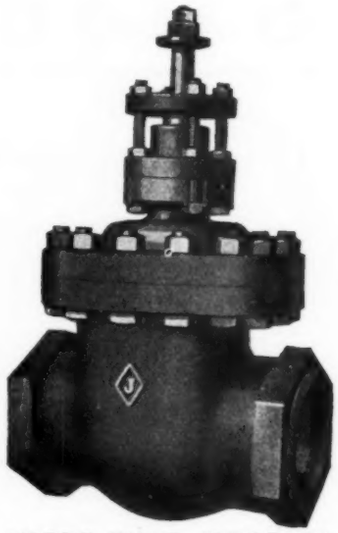
A self-oiling, hydraulic gate valve of improved design is produced by the Jarecki Manufacturing Company under the indentification mark of Figure 1004-A. It construction is of semi-steel and is suited to extremely high - pressure natural gas and oil lines. Packing may be renewed under pressure with the valve wide open. Each valve is tested to 1500 pounds.



JARECKI VALVE, FIGURE 1004-A

Type 1005

Figure 1005 is also adapted to high-pressure natural gas and oil lines. It is tested to 2500 pounds and, like Figure 1004-A, can be repacked under pressure when the valve is wide open. It is of semi-steel construction with double discs, stationary steel stems and full opening of pipe size.



JARECKI VALVE, FIGURE 1005

Full information on these and other valves may be had on request to Jarecki Manufacturing Company, St. Louis.

Reschke Pumper

RESCHKE MACHINE WORKS COMPANY

Reschke Machine Works Company, Wichita, Kansas, has recently developed a new pumper known as the Reschke Long Stroke Unit Pumper.

In this unit the sills extend to the casing head; the Samson post is cross-braced; the engine is mounted between the pitman and the Samson post; and the main shaft is equipped with a drum from which may be operated a field pump of a pulling rig.

An oblong connection on the pitman is a race for the roller on the circular drive gear. Centrally within this race is a gear with straight sides and a half-round at the top and at the bottom. The drive gear in making three revolutions, forces the oblong gear to travel a complete orbit around it. This gives the pitman a long vertical travel, at full speed. At both ends of the stroke while the gear is going around the turn, the vertical movement is slow, giving a slow stop and start.

It is said that a six horsepower engine or a five horsepower motor will furnish ample power with the unit to pump a 2000-foot well. Length of stroke is easily modified by adjusting the walking beam and Samson post.

The pumper can be installed on the derrick floor temporarily, or permanently, on a concrete base. More than one well may be pumped at the same time through jacks.

Specifications on the outfit will be furnished by the company, upon application.

BELL'S SWIVEL TOOL WRENCH

QUALITY SERVICE

OKLAHOMA IRON WORKS
TULSA, OKLA.

OIL HEAT TREATED PRODUCTS

High Pressure Fittings **Flow Heads**

A. P. I. RIG IRONS

Float Collars **Float Shoes with Guide**

Split Casing Ring

Rotary Traveling Block **Rotary Crown Block**

SOLD BY ALL SUPPLY COMPANIES

We solicit gray iron or semi-steel castings and steel forgings either rough or machined.

We are in position to furnish finished products from cast steel.

OKLAHOMA IRON WORKS

Main Office and Works, Tulsa, Oklahoma

Say you saw it in The OIL WEEKLY

SPENCER TRAILER

New Spencer Trailer

SPENCER TRAILER COMPANY

A new four-wheel trailer especially adaptable for oil field and other heavy duty work has been developed and now is being manufactured by the Spencer Trailer Company of Augusta, Kansas.

This trailer is being built in three sizes: Two-ton, four-ton and six-ton capacity. It is mounted on a frame of hardwood and steel with average length of about 14 feet. General design and construction is similar to the well known Spencer two-wheel trailer in wide use throughout the field. It is light running, durable and made for use with any truck and is adaptable to the requirements of present day transportation needs. Either pneumatic ar solid tires are standard equipment with the four-wheel trailer.

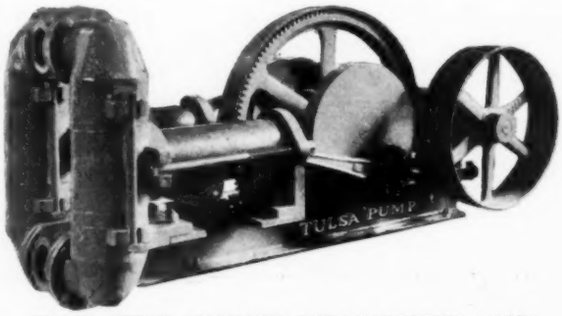
New Light Weight Pump

TULSA PUMP COMPANY

A new design in a pump for the oil industry has been developed by the Tulsa Pump Company of Tulsa, manufacturers and distributors. This pump is the two-cylinder, single action type and is light in weight and durable.

The pump is manufactured with a one-piece cast-iron base that simplifies construction. The valves are of ball type construction and the valve seats and cages are one-piece bronze. The pump starts without priming and anyone can operate or repair it.

Further information may be obtained by communicating with the company direct.



TULSA PUMP COMPANY TWO-CYLINDER PUMP

It's Coming!

Even Now

—they are beginning to arrive . . . these men who are always a few jumps ahead of the crowd.

They see the trend. They know that Fort Worth, with its West Texas Oil Fields, is the only Southwestern city from which *all* fields may be reached *over night*.

Fort Worth and this bank welcome these men who are to be with us while the rapid, yet substantial development of Fort Worth makes history.

The Fort Worth National Bank

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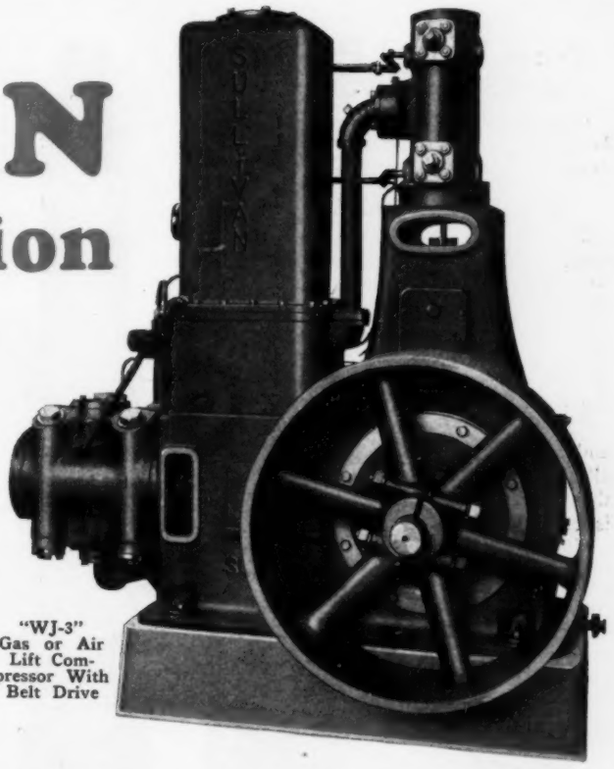
SULLIVAN
Aids to Production

Angle Compound Gas Lift Compressors Make Good

The special series of Sullivan Angle Compound Compressors, designed recently for gas and air lift oil pumping, have met with an immediate demand.

Oil men have recognized these machines as satisfying all of the varying and difficult requirements of oil field pumping. During the past few weeks Angle Compounds have been purchased by companies in widely separated parts of the Mid-Continent field, and are making good for their owners.



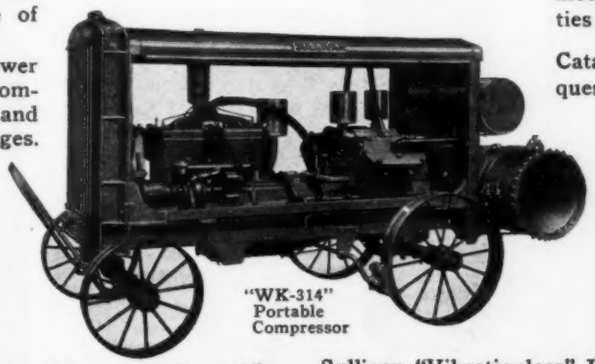
"WJ-3" Gas or Air Lift Compressor With Belt Drive

The Angle Compound is compact and smooth-running and can be mounted on skids for quick moves. At the recent Petroleum exhibition at Tulsa a skid-mounted Angle Compound ran for 10 days in the rain and mud, and maintained a pressure of 500 pounds.

Small installation cost, small power cost per unit of gas or air compressed and reduction in care and attendance are notable advantages.

These machines are adapted to belt or tex-rope drive from motor or gasoline engine, or to direct drive from Foos Gas Engine, Fairbanks-Morse Diesel engine, or synchronous motor. A suitable range of capacities is available.

Catalog 83-G will be mailed on request.



"WK-314" Portable Compressor

Diamond Drill Popularity Grows

Diamond Drills have been gaining recognition rapidly with the big oil companies—not only for the certainty of information they obtain, but for the savings they effect by quick drilling, and quick moving.

During one period of 12 months, one company bored 221,000 feet with nine Sullivan Diamond Drills. One of the drills bored 5554 feet in one month and moved eleven times.

The "N" portable drill is generally used for structure testing, and will take a 2-inch core to 2000 feet. The "P-2," which recently brought in the first well in the Turner Valley Field of Alberta against a gas pressure of 2500 pounds to the inch—and the "FK" drills are used for deep tests.

The "P-2" will take core effectively at 4000 feet, and the "FK" has cored below 6000 feet.

Send for the free 80-page handbook—
"DIAMOND DRILLING FOR OIL."

"N" Mounted Drill

Portable Air Power and Air Tools

Sullivan "Vibrationless" Portable Compressors give to the oil industry dependable air power for running air tools in the erection of tanks, and laying of pipe and many other construction or repair jobs.

These machines are built in capacities of 110, 160, 220 and 310 cu. ft. per min., powered by the reliable Buda gasoline engine, and mounted on steel wheels, trailer trucks or skids.

Sullivan Compressors, and Sullivan Rock Drills, Concrete Breakers, Clay Spaders, and Turbinair Hoists are shown at work in the free picture book.

"Speed Up With Air."

Sullivan Machinery Company

409 Peoples Gas Bldg., CHICAGO, U. S. A.

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Dallas	Los Angeles	Salt Lake City	Madrid	Turin
Denver	Muskogee, Okla.	St. Louis	Mexico City	Vancouver
Duluth	New York	Toronto	Paris	Warsaw
	Pittsburgh	Algiers		

SULLIVAN

Say you saw it in The OIL WEEKLY

New United Products

UNITED IRON WORKS, INC.

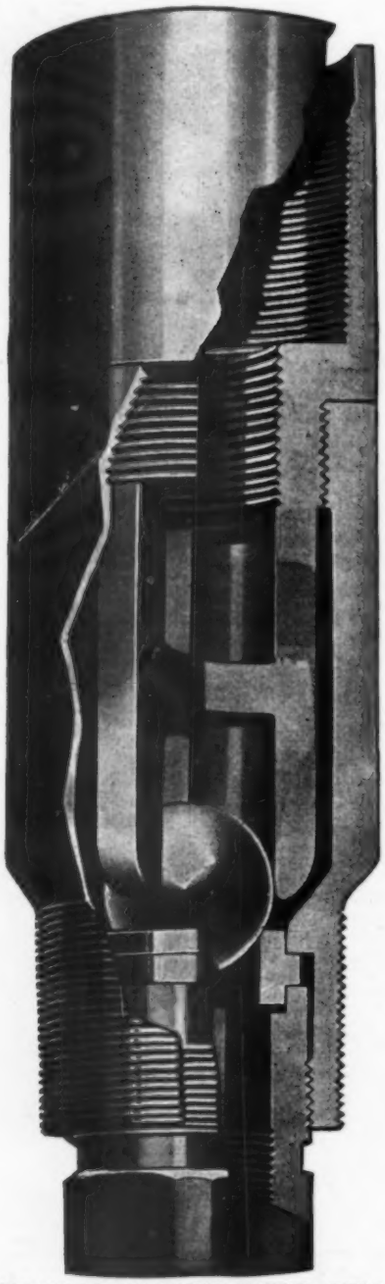
UnitedIron Works, Inc., Kansas City, Missouri, has introduced several new items of equipment to the oil trade.

Polished Rod Grip

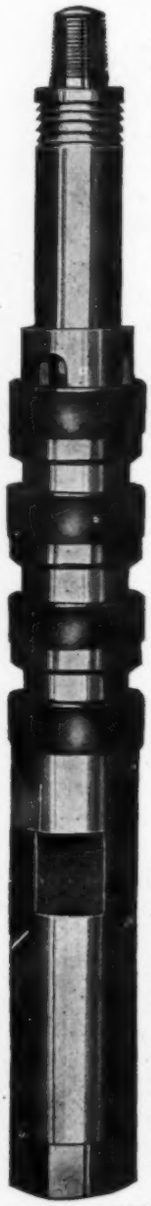
The "United" polished rod socket grip consists of a one-piece spider with taper bore, and a one-piece three-jaw slip. This slip is machined on the outside to conform to the taper bore of the spider. The bore of the slip is provided with wickers of fine pitch that engage the surface of the polished rod.

The spider is machined from bar steel and the silp is machined from heat treated alloy steel and hardened. It is made in three sizes for 1⅛, 1¼, and 1½-inch polished rod.

The swivel bearing consists of a ball thrust bearing for use between the grip and the member that supports the load of the string of sucker rods and permits unrestricted relation of the sucker rod string.



HYDRAULIC STANDING VALVE, OKLAHOMA TYPE



SELF - FLUSHING TRAVELING VALVE

Jack Adjuster

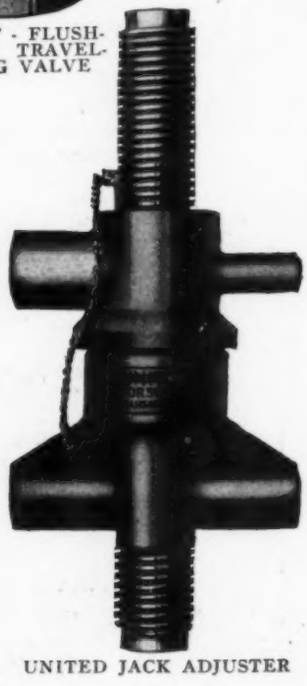
The jack adjuster is a support for the sucker rod string on a pumping jack and is provided with a tubular adjusting screw that permits convenient vertical adjustment for the purpose of "bumping" and spacing valves, pulling the standing valve reconnecting unscrewed sucker rods or disconnecting the well load from the pull rods.

Ease of adjustment is provided by a large ball thrust bearing which is placed between the nut casting and the trunnion casting. The jack adjuster is designed amply for the heaviest pumping well and is constructed of steel.

Polished Rod Screw Hanger

The rod screw hanger is a pumping hanger consisting of a "T" head with trunnion bearings suspending two frame bolts and a carrier. This carrier is threaded for a tubular adjusting screw.

The construction is such that use of the hanger is said to provide a pumping well with all the adjustments provided by a temper screw on a drilling well.



UNITED JACK ADJUSTER

Self Flushing Traveling Valve

The "United" self flushing traveling valve is a four-cup valve that discharges through ports located at the top cup in such a manner that the discharged fluid flushes out, preventing the formation of a sand collar.

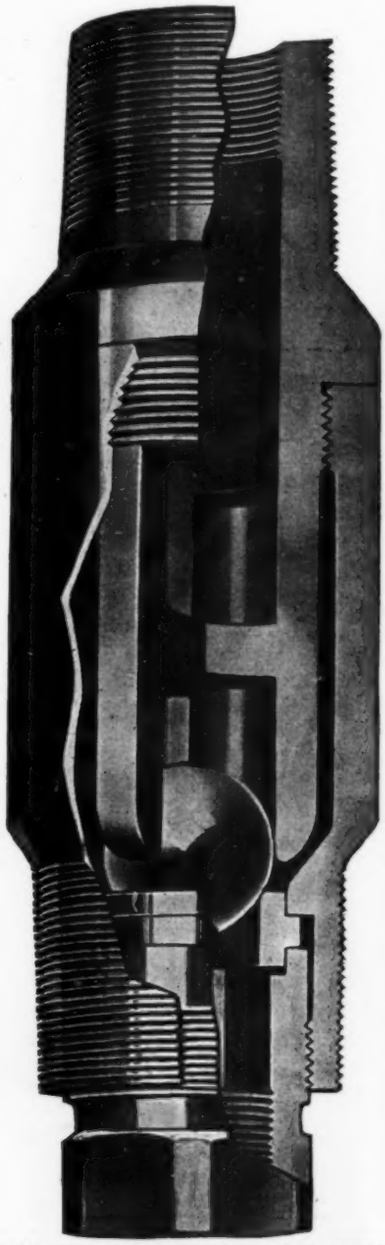
The shank is made with threaded standard sucker rod connection and is provided with wickers for fishing.

Oversize balls and seats provide large fluid capacities.

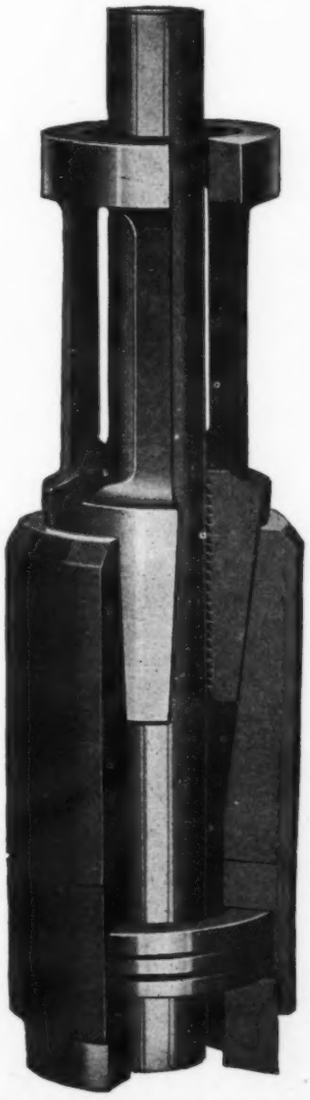
The valve is of steel and is furnished in 1¾, 2¼, and 2¾-inch working barrels.

Hydraulic Standing Valve

The hydraulic standing valve is an oversize valve for connection to the bot-



HYDRAULIC STANDING VALVE, TEXAS TYPE



UNITED POLISHED ROD GRIP

tom of the working barrel. The ball valve is guided during its lift.

A threaded connection for a pipe nipple at the top provides the means of making a sand trap and standard pipe connections at the bottom provide the connection for gas anchors.

Oversize ball and seats are used.

The valve is constructed of steel and furnished for two, two and one-half, and three-inch working barrels.

The valve is furnished with either male connection to screw into the working barrel coupling or with female connection to screw directly on the working barrel.

More information on all these items can be had by writing the company direct.

Save this issue. It is valuable and you will have several occasions to refer to it during the coming year.

Detachable Core Head

OIL WELL CORE DRILLING COMPANY

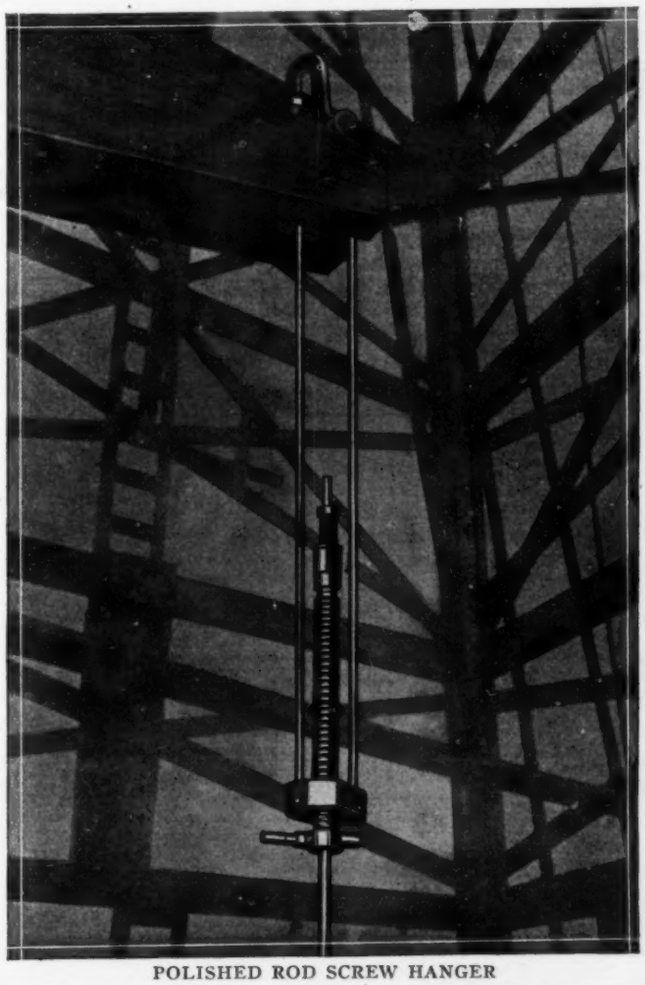
The Oil Well Core Drilling Company, 1035 A. G. Bartlett Building, Los Angeles, announces a "Quick-Change" detachable core head. Quick and economical renewability is a feature of the head.

OIL WELL CORE DRILLING COMPANY'S DETACHABLE CORE HEAD

The body of the head is interchangeable on all Oil Well FT Type head pins and can be used in place of the one-piece head.

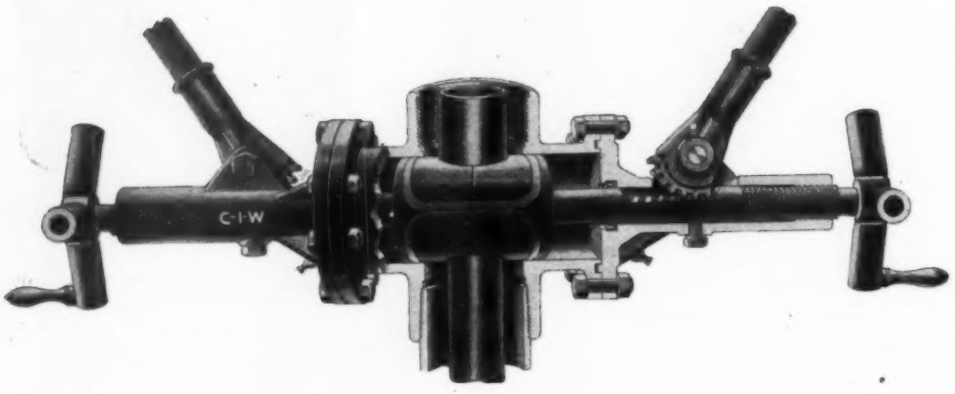
The detachable core head is especially adaptable for use on wildcat operations.

More information will be supplied by the company on request.



POLISHED ROD SCREW HANGER

On Flowing Wells-Pumping Wells Hook-ups—you CAN have POS
New Tubing Control Head



The illustration at the left shows a cut-away view of the control head, illustrating the method of packing the tubing.

The above wash drawing shows the method of packing the tubing between the outer well casing. Packing the tubing is an instantaneous operation by pulling the lever jack which forces the ram against the tubing and then running up the locking screw to hold the rams in place. This effectively packs the tubing to withstand up to 750 pounds pressure.

Gives absolute SAFETY to operator in the face of dangerous operations.

NOW—Run Tubing in Wells Under Pressure

This composite control-head permits operators to produce oil IN SAFETY—at ALL TIMES—regardless of the recovery method employed. It is easy to install, attaching right at the top of the final string of casing. It is rapid and certain in operation and designed with surprisingly few parts. Above all, it carries a most reasonable price.

Write for Folder

CAMERON

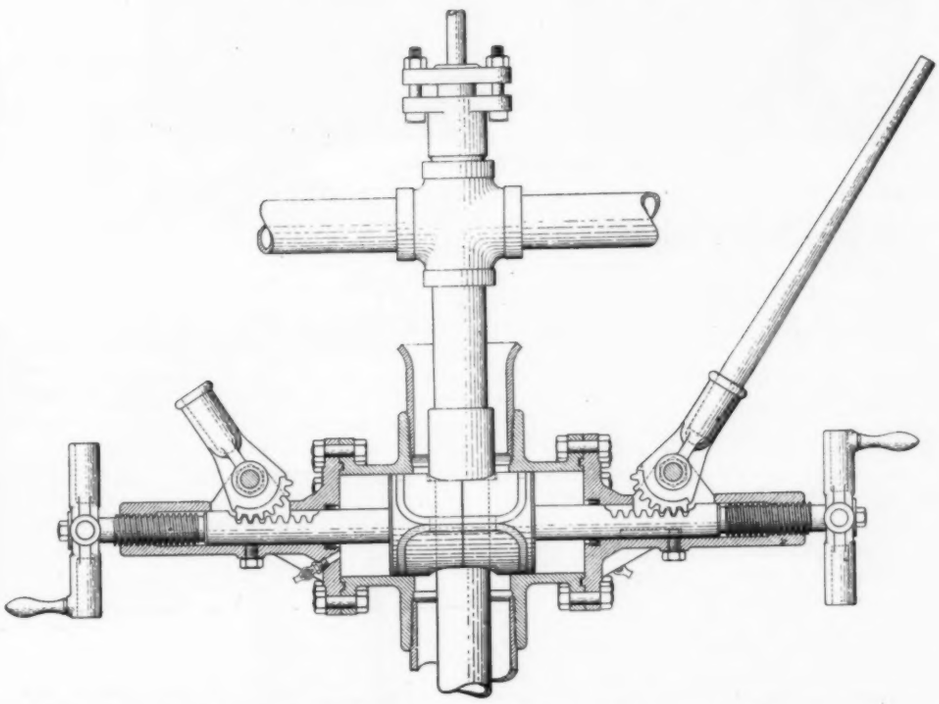
Manufacturer of

Oil Well Supplies and Fishing Tools

-Gas Wells-or Gas and Air Lift ITIVE CONTROL with this and Blowout Preventer

The illustration at the right shows a sectional view of the control head illustrating a hook-up on a pumping well.

Tested and guaranteed to withstand pressures up to 750 Lbs. per square inch.



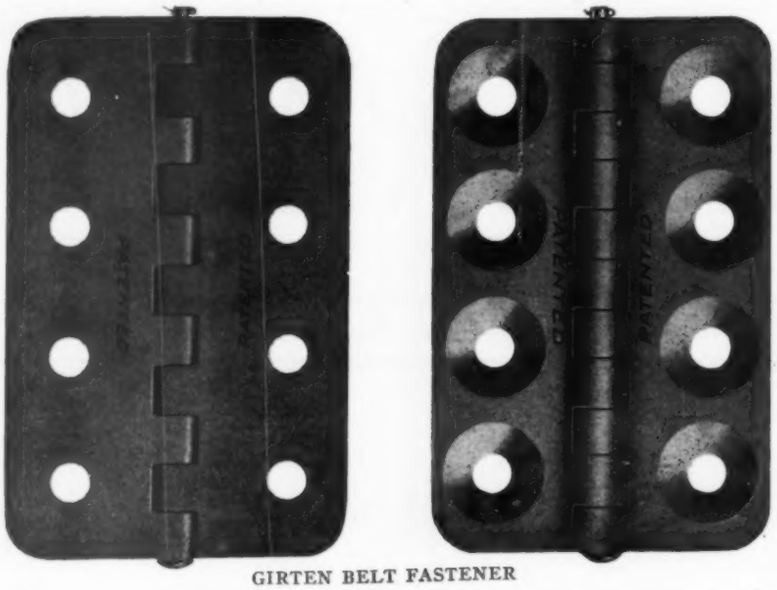
Rams are Quickly Controlled by Lever Jacks

—and after closing, each side of the preventer is equipped with a lock screw to hold rams securely in place around tubing. When pressure is relieved, this tool may be used on single or double stage gas or air lift hook-ups. It also eliminates tubing spider and slips, anchoring tubing with collar on top of rams, ready for stuffing box attachment and pumping assembly.

Giving Detailed Information

IRON WORKS

Houston, Texas



GIRTEN BELT FASTENER

Girten Belt Fastener

GIRTEN BELTING & SUPPLY COMPANY

A new belt-fastener is being introduced by the Girten Belting & Supply Company, Inc., 511 Washington Avenue, Houston.

The main feature of this fastener is that it conforms to the pulleys whether straight-faced or crowned, thereby utilizing all the belt surface to the pulleys.

As shown by the accompanying illustrations, the fastener is hinged, giving it maximum flexibility.

The fastener is countersunk at the bolt holes on the inside, thus allowing the belting to be drawn up into the countersink by the bolts, thereby permitting nothing to touch the pulleys but the belt iself.

For hard pumping wells a double row of bolts can be used insuring the user proper strength in the fastener.

The fastener has been in use in experimental work in the Gulf Coast for more than a year and is now well past the experimental stage.

Additional information with literature will be furnished by the company, on request.

New LeBus Overshot

LEBUS ROTARY TOOL WORKS

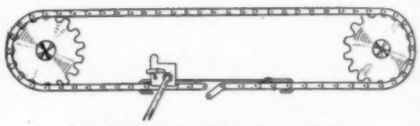
Lebus Rotary Tool Works, Electra, Texas, announces a new combination cutter and overshot.

The device consists of the following parts: an overshot head, overshot body, overshot spring for forcing the overshot slips to a gripping position, overshot slips, compression spring which feeds the cutters into the drill pipe, cutter body bushing, bushing which contracts with the top part of the cutters, slots in the cutter body to receive the cutters, the cutters, wooden blocks which hold the cutters in an upward position while going over the drill pipe, and a hook guide.

In fishing with the tool, it is set with the wooden blocks in the lower portion of the slots under the cutters. The blocks hold the cutters in an inward position until after the tool is lowered over the pipe being fished for. As the tool is lowered over the pipe, the cutters are forced back into the upper position of the slots. This forces the bushing to an upward position and compresses the spring. After the tool has been lowered over the drill pipe being fished for, it is always ready for a cut.

Cutting is done by forcing the cutters into the drill pipe as they are rotated slowly to the right.

After the cut is made, the cutters force out the wooden blocks and hinge into the lower portion of the slots. In this position they connot come in contact with anything as the tool is raised up to where the slips take hold of the first tool joint or collar above the cut, and the portion cut off is taken from the well as the cutter is removed.



LEBUS ROTARY WINCHET

Rotary Winchet

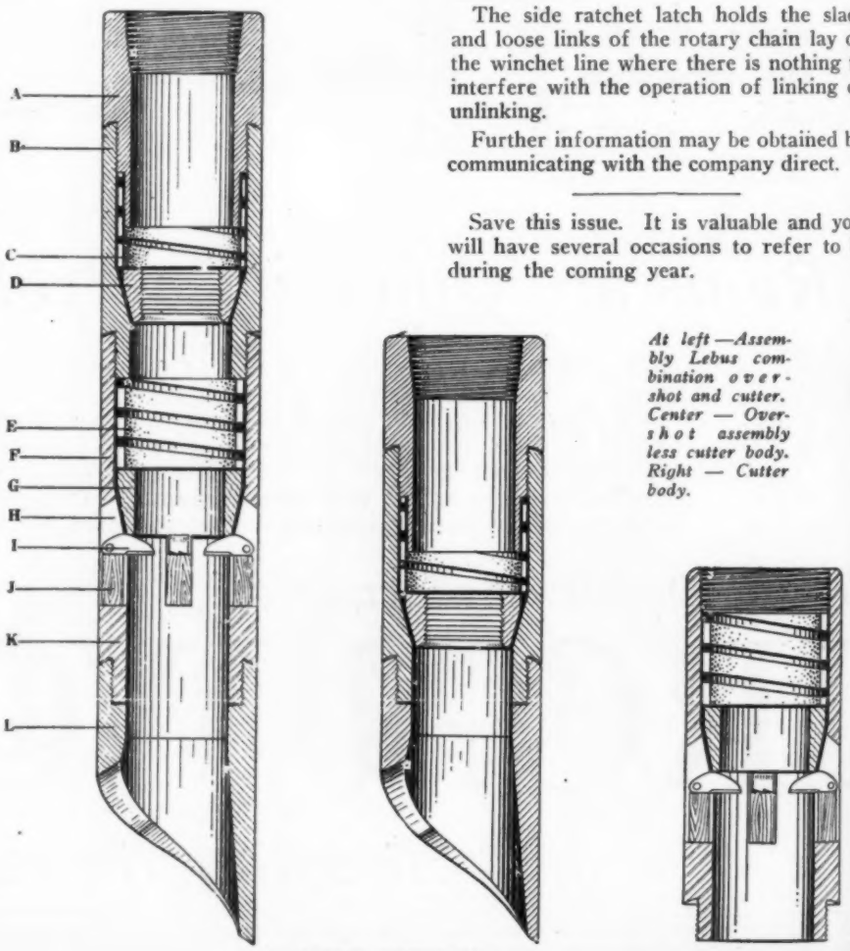
A new tool brought out for rotary operators is being manufactured and sold by the LeBus Specialty Company of Electra, Texas, and known as the LeBus Winchet for linking and unlinking rotary drive chains.

The winchet is quickly applied to the loose chain and when the crank is turned the chain is drawn to any degree of tightness desired.

The side ratchet latch holds the slack and loose links of the rotary chain lay on the winchet line where there is nothing to interfere with the operation of linking or unlinking.

Further information may be obtained by communicating with the company direct.

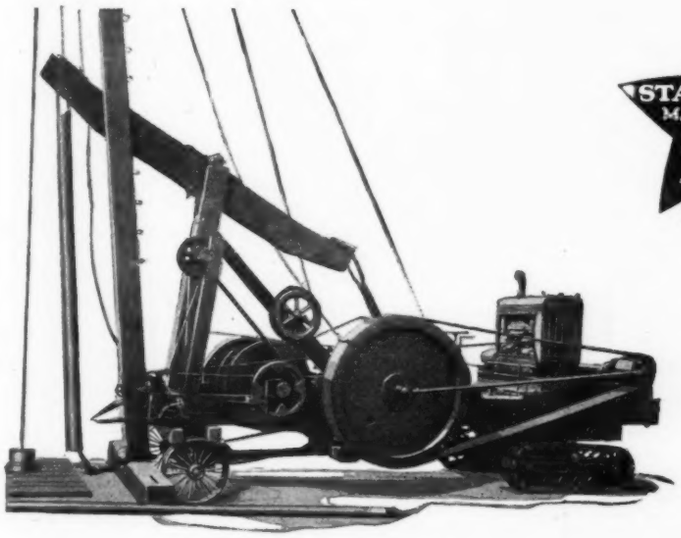
Save this issue. It is valuable and you will have several occasions to refer to it during the coming year.

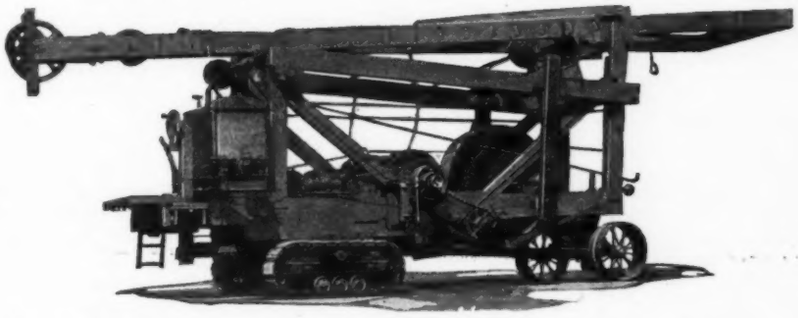


At left—Assembly Lebus combination overshot and cutter. Center — Overshot assembly less cutter body. Right — Cutter body.

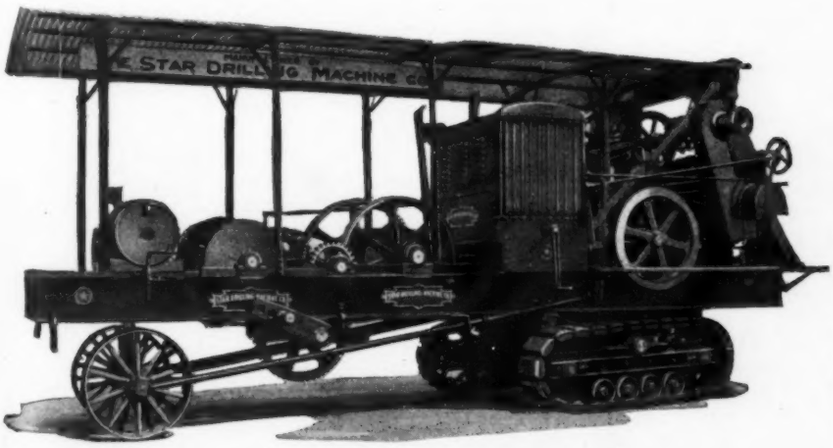
LEBUS OVERSHOT

Below—The new Star No. 47ST is designed for new drilling to 2500 feet and for deep cleaning out, heavy lease maintenance work and drilling in wells after rotary. Has chain driven bull reel with fast pulling speed, powerful sand reel and a heavy duty reverse clutch. Ask for Bulletin 20.

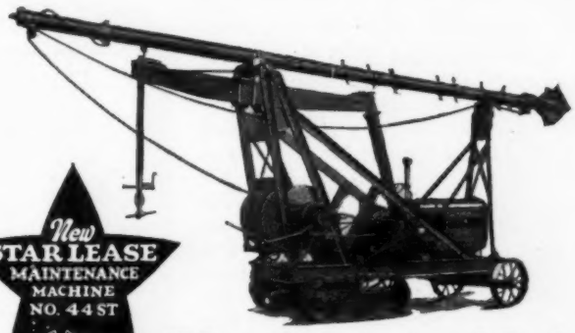




Above—The Star No. 45ST Heavy Duty Spudder will handle heavy tools and spud to 2000 feet. Fast moving and rigging up saves time and money. Instantaneous reverse may be had on any part of the machine. Has chain driven bull reel. May be furnished for tractor or other separate power. Write for Bulletin No. 21.



Above—Star No. 65. This is the first portable combination rotary and cable tool drilling machine. Levers identical with standard rotary. Reverse operates without shock. Will drill 2500 feet. Can be backed up to a standard derrick and start threading your blocks. Performance data, specifications and prices furnished upon request.



Will Cut Your Cleaning-out Costs!

Because it moves completely assembled and is quickly rigged up. 58 ft. telescoping pipe mast raised by power. Can be used under standard derrick. All reels chain driven. 3 speeds provide for fast pulling as well as handling heavy strings of pipe. Runs equally well on gasoline, kerosene or natural gas. Write for Bulletin 18.

Setting the Pace!

Those who want the latest and most improved drilling machines—are turning to the new gasoline powered, super-tractor Stars.

By saving time and money these fast moving, easily handled, completely assembled outfits are making new records for drilling economy unequalled before.

For lease maintenance work, for new drilling, spudding or cleaning out there is a special new type Star Machine that will do the work cheaper and quicker than what it has ever been done before.

Send the coupon for details.

The STAR

Drilling Machine Co., Akron, Ohio

Branches at: Chanute, Kansas; Wichita Falls, Texas; Long Beach, Calif.; Portland, Ore.

Export Office: 2 Rector St., New York City, U. S. A.

The Star Drilling Machine Co.,
Akron, Ohio

Please send Bulletin No. .....
Also information and prices on a Star

suited for new drilling. Depth .....

Cleaning out, Depth .....

Name .....

Address .....

.....

Oil Weekly

New McEvoy Products

J. H. McEVOY AND COMPANY

J. H. McEvoy and Company, Texas Avenue and Milby Street, Houston, announces new casing and tubing control heads, and casing reducing heads. These are said to be convertable from one method or system of producing to the other as Christmas trees, and Hook-ups of practically every description are available with the devices. Flowing wells, air or gas lift systems, pumping wells with either pull rods or "Macaroni" systems can all be handled with these control heads.

Threaded connections have been used on all the equipment.

All the heads are made of electric cast steel tested to 2500 pounds pressure and 75,000 pounds for tubing load in the slips.

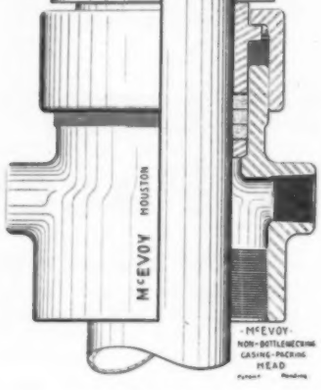


FIG. 1

The main bodies of casing and tubing control heads are threaded on the inside lower end to screw on casings of the various sizes. The smaller heads up to five and three-sixteenths inches and the larger sizes up to eight and one-quarter inches are threaded so they may be used with the casing reducing head, or to connect

FIG. 2

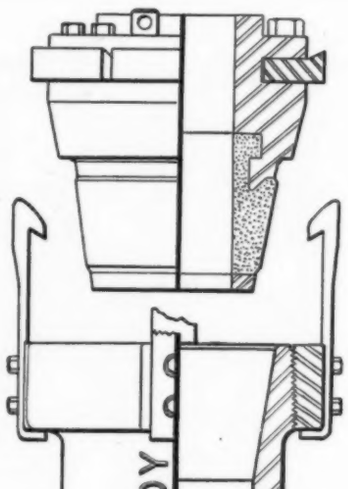


FIG. 3

up through flanges to the outer casing after screwing onto the inner casing.

Heads are made in two forms: Style A with slips and stuffing box for sustaining the tubing at any point or depth in the well, and style B with the tubing hanger head having packing rings in the head that packs off the tubing string in the spider of the main body.

Figure 1 shows the McEvoy casing and reducing head developed to meet the needs for casing reduction and the tying of the other casing to the inner string. This is accomplished by means of the stuffing box principle, and is said to eliminate the danger of "bottlenecking" the inner string. Most of the weight of the inner string rests on the casing head body, a small proportion only being on the packing, due to the construction of the top gland which is depressed by a top ring to a limited extent, the top ring supporting the inner string coupling.

This head is made at present in three sizes, the largest threaded on the outside to screw into 12½-inch couplings as well as into 11-inch couplings, and threaded inside to screw onto 10-inch casing. The second size screws into the

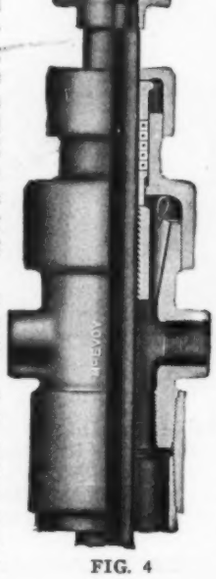


FIG. 4

10-inch coupling and onto the eight and one-quarter-inch casing, and the smaller size screws into the eight and one-quarter-inch coupling, and onto the six and five-eighths-inch pipe, with other intermediate sizes fitted to order.

This casing reducing head, with the McEvoy casing tubing control head mounted above on the inner string, is said to give the user a wide range of pipe sizes with excellent control of the same when the valves and fittings are added.

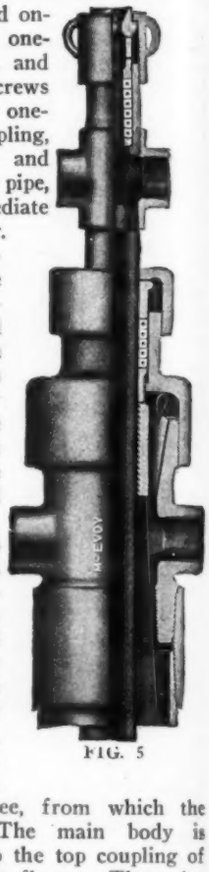


FIG. 5

Figure 2 shows the main body of a McEvoy "Universal" casing and tubing control head with the same body used on both. On the upper end of the head is mounted a swage reducer to receive a gate valve, nipple, and cross tee, from which the flow lines run. The main body is screwed directly into the top coupling of the casing, or into a flange. The valve on the swage reducer temporarily controls the bringing in after bailing or swabbing. The two side openings in the main body should be previously connected up, at least with nipples and valves for emergency.

Figure 3 shows the safety pressure head. Construction of this unit consists of a split or hinged steel flanged head piece with a locking device to clamp quickly on the drill stem, a packer securely held in the split hinged flange, shaped to conform to the spider in the upper end of the main body of the casing head. Under weight of the drill stem, the head is said to seat in the spider and is automatically locked in place by snap hooks or dogs, preventing the safety pressure head from being forced up the pressure.

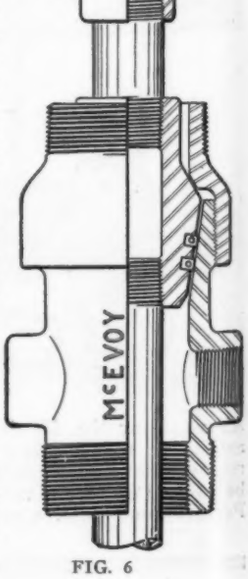


FIG. 6

Figure 4, style A, shows a recommended "set-up" for the second and third phases or stages of a

well's life. The main body and tubing slips operate the tubing in and out of the well and hold the tubing at any desired point. Slips are housed within the main body and cap. In the upper neck portion of the main body cap is located the tubing stuffing box with packing and glands for two-inch, two and one - half-inch and three-inch tubing. The stuffing box allows for expansion of tubing if resting on bottom when oil or water temperatures run high, and also packs off pressure between the top of the tubing and casing.

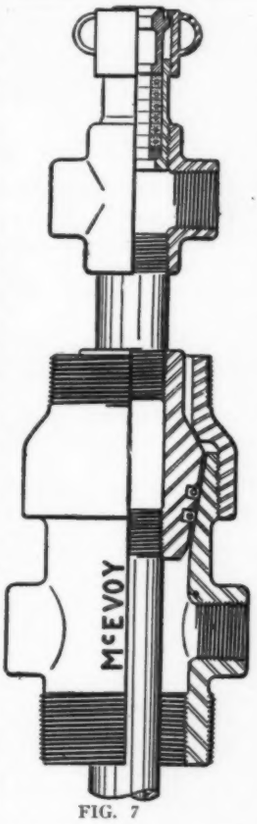


FIG. 7

The stuffing box cap adjusts the packing to hold any pressure. Tubing is held in the slips in top of the main body spider and extends above the stuffing box cap a few inches to receive a valve, if needed, and the cross or tee from which the discharge lines to the tank or pit may be run, and to add the polished rod stuffing box when the well is put on the pump.

This "set-up" is also recommended for flowing wells artificially gy gas or air lift systems. Gas or air may be forced down through the side openings in the main casing head, body, and casing, outside of the tubing, forcing the oil up through the tubing. The well may be operated reversely if desired, by forcing the air or gas down through the tubing flowing the oil up through the casing and main body to the flow lines connected thereto. A "long bend" connection can be made from the top opening in the cross on top of the tubing, if desired.

FIG. 8

Figure 5 shows a "set-up" for the last phase of a well's production pumping and shows a McEvoy "Universal" casing and tubing control head with stuffing box for polish rod complete. By unscrewing the polish rod, stuffing box, and removing intact with the polish rod, rods, traveling valve and cups or plunger may be pulled without disconnecting the flow lines.

Figure 6, style B, shows a "set-up" with a tubing hanger head to hang the tubing from, instead of hanging it in the slips as shown in Figures 4 and 5. Ends of the tubing hanger head are threaded to receive three-inch tubing as well as valve and cross, to make the connections for flow lines. The hanger head is tapered to fit the spider in the top of the main body and has rings of hydraulic or lead pacing inserted to make a pressure tight joint by the weight of the tubing, and instead of the main body cap with stuffing box for the tubing as shown in Figures 4 and 5. The swage six-inch reducer used in Figure 2 is again connected in the "set-up," the inside shoulder of which comes down in contact with the tubing hanger head shoulder and forces the tubing hanger head down more securely in its seat, holding it against any pressure. This "set-up" functions in the same manner as that shown by Figure 4.

Figure 7, style B, illustrates a "set-up" for a pumping well, with a stuffing box for the polished rod added to the top of the cross. Tubing is hung from a tubing hanger head instead of in the slips, and is handled in and out of the well with slips.

Equipment shown in Figure 4 with addition of a swage reducer shown on top of the main body in Figure 2, is said to handle all phases of a well's production and with the addition of the safety pressure clamp head attachment and locking ring, will make drilling safe.

With the addition of slips and safety pressure clamp head attachment, the outfit shown by Figure 7 will also handle all production and make drilling safe, according to the manufacturer.

Figure 8 shows the McEvoy set shoe assembly and casing float shoe. This device has a lubricated valve with stem and spring housed in for protection. The outfit is made in sizes from two inches up to any size desired, and are furnished in any casing size and thread, as well as in flush jont style.

McEvoy Bailer

The McEvoy improved bailer consists of steel with ground joint. The bottom can be reversed. The non-swinging dart construction enables it to be used to advantage in cleaning out wells.

Mc EVOY BAILER

The bailer is made in one piece of electric cast steel.

The body is made of flush joint pipe and furnished in any lengths.

The adapter is threaded on the lower end to fit the bailer bottom, and on top to fit the male lower end of the flush joint pipe forming the bailer body.

In the bailer bottom the valve is made of steel with ground joint. The bottom can be reversed. The non-swinging dart construction enables it to be used to advantage in cleaning out wells.

New Paraffine Remover

THE KEMICAL PROCESS COMPANY

The Kemical Process Company, P. O. Box 1468, Tulsa, announces the Dissolvotine Kemical Shell for removing paraffine or asphaltum from oil sands.

The chemical comes in shells of the right size to run down the well on the bailer or shot line. The shell is made of special perforated material and filled with the chemical. When lowered to the bottom of the well into water, the water causes an exothermic reaction with the combination of chemicals, producing sufficient heat and action to dissolve paraffine and asphaltum.

The charge is placed where it is wanted before any action takes place.

The Kemical shells can be run in the well on the bailer, tied to the dart with a small rope a few feet long. When bottom is reached a pull on the bailer will release the shell and action will start.

More complete information will be mailed from the company on request.

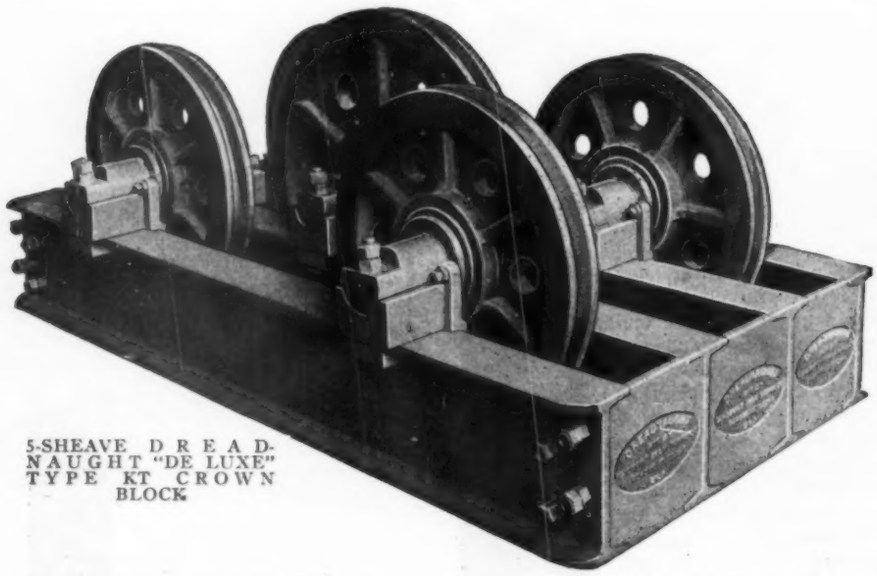
KEMICAL PROCESS PARAFFINE REMOVER

New Bolted Steel Tank

COLUMBIAN STEEL TANK COMPANY

Columbian Steel Tank Company, 1505-1623 West 12th Street, Kansas City, Missouri, announces a new bolted steel tank with a capacity of 27,500 barrels.

The tank is 90 feet in diameter and 24 feet high, of the vapor type construction. The deck is supported by a network of trussed steel girders and bridging. All bolted seams are reinforced to give an ample factor of safety over the load to be carried.



5-SHEAVE DREADNAUGHT "DE LUXE" TYPE KT CROWN BLOCK

Dreadnaught Products

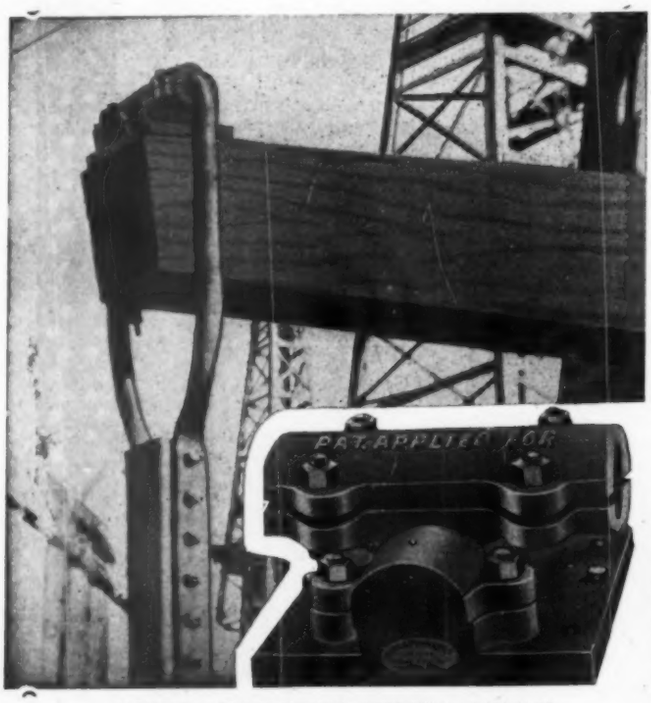
BEAUMONT IRON WORKS COMPANY

Beaumont Iron Works Company, Beaumont Texas, is putting on the market a new crown block, a new Dreadnaught draw works, a new oscillating stirrup bearing, and a new Dreadnaught pumping hoist.

Dreadnaught "De Luxe" Crown Blocks

The new heavy-duty rotary crown block uses Timken roller bearings and manganese steel sheaves.

The trend to manganese steel sheaves of larger diameters and anti-friction bearings are all to be found in this new crown block. Four sizes of steel sheaves are available. All are made to A. P. I. specifications. Choice is afforded the purchaser as to the size sheaves, as the blocks can be furnished in any combination desired. All De Luxe model blocks are mounted on 12-inch I-Beams and furnished in sizes for both four and five-foot derrick tops. Separate sheaves complete with shaft and bearings are furnished for installation on other crown blocks. Frequently sheaves with anti-friction bearings are desired for the fast line. Sheaves are fully adjustable to position on the beams and securely held by large bolts and steel lug clamps.



YOUNT OSCILLATING STIRRUP BEARING

Dreadnaught Draw Works

The company will soon announce a new heavy duty drawworks which will be of interest to all in the rotary drilling fraternity. The new rig is to be of the four-post type with either large timber or steel "H" beam posts. Specifications have not been issued, but it is understood that this draw works will emphasize the trend to larger and heavier equipment which is adapted to the deepest drilling now in progress.

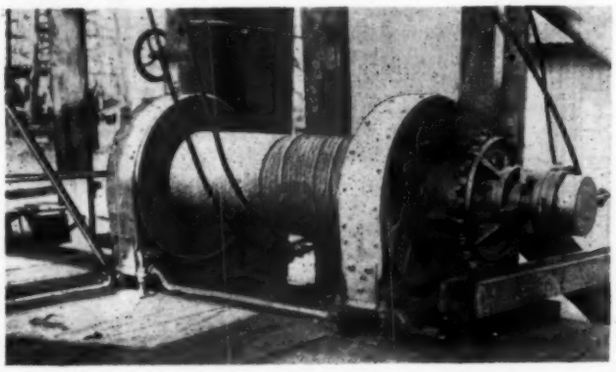
Shafting is to be 8-inch diameter of special high-carbon alloy steel. Water cooled brake flanges, with exceptionally wide brake bands and larger drums are included in the plans.

Yount Oscillating Stirrup Bearing

The Yount Oscillating Stirrup Bearing is a device being manufactured by Beaumont Iron Works for correcting the misalignment between walking beam and crank.

It is mounted on the pitman end of the beam and contains the bearing for the stirrup. Double trunions form a transverse bearing in the base casting and thus give the action of a universal bearing.

Although it was designed especially for pumping, the device is said to work equally well for drilling with cable tools. It facilitates removal of pitman from wrist pin, which is often difficult. It is made for all standard stirrups.



FRICTION CLUTCH HOIST

Friction Clutch Hoist

The new friction clutch hoist permits the use of non-variable speed, non-reversing power.

The hoist employs a 60 - horsepower Twin cone clutch which is mounted on the shaft with a steel housing, to which the driving sprocket is keyed. Operating levers are arranged for convenience of the operator when in position at the brake. Several improvements are offered in the new type, such as post type brakes with 8-inch bands and larger capacity drum.

In electrical installations, the addition of the friction clutch on the hoist, permits using the so-called squirrel cage motor.

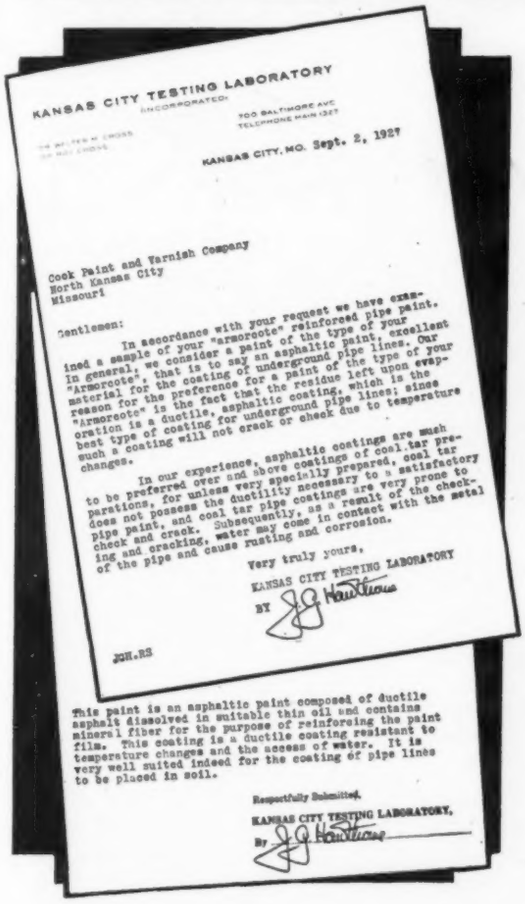
More details on all these items can be had by writing the Beaumont Iron Works Company, Beaumont, Texas, or any Frick-Reid store.

CORRECTION NOTICE

In the full page advertisement of The Buda Company appearing elsewhere in this issue, the statement was made that the engine is made in 75, 5, and 135 horsepower. This statement is in error and the copy should read, "Made in 75, 85, and 135 H. P. sizes."

Save this issue. It is valuable and you will have several occasion to refer to it during the coming year.

12 Years Of Satisfactory Service *from* Armorcote Reinforced Pipe Paint



KANSAS CITY TESTING LABORATORY
INCORPORATED
700 BALTIMORE AVE.
TELEPHONE MAIN 1367

KANSAS CITY, MO. Sept. 2, 1927

Cook Paint and Varnish Company
North Kansas City
Missouri

Gentlemen:

In accordance with your request we have examined a sample of your "armorcote" reinforced pipe paint. In general, we consider a paint of the type of your "armorcote", that is to say an asphaltic paint, excellent material for the coating of underground pipe lines. Our reason for the preference for a paint of the type of your "Armorcote" is the fact that the residue left upon evaporation is a ductile, asphaltic coating, which is the best type of coating for underground pipe lines; since such a coating will not crack or check due to temperature changes.

In our experience, asphaltic coatings are much to be preferred over and above coatings of coal tar preparations, for unless very specially prepared, coal tar does not possess the ductility necessary to a satisfactory pipe paint, and coal tar pipe coatings are very prone to check and crack. Subsequently, as a result of the checking and cracking, water may come in contact with the metal of the pipe and cause rusting and corrosion.

Very truly yours,

KANSAS CITY TESTING LABORATORY

BY J. J. Hawthorne

JJH.RS

This paint is an asphaltic paint composed of ductile asphalt dissolved in suitable thin oil and contains mineral fiber for the purpose of reinforcing the paint film. This coating is a ductile coating resistant to temperature changes and the access of water. It is very well suited indeed for the coating of pipe lines to be placed in soil.

Respectfully Submitted,

KANSAS CITY TESTING LABORATORY,

By J. J. Hawthorne

TWELVE years ago the city of Wellington, Kansas, installed fourteen miles of pipe line for a water supply project. The work was done by the Benham Engineering Company, who painted the eighteen-inch pipe with Armorcote Reinforced Pipe Paint. Says Mr. Webster L. Benham:

"Investigation of the coating from time to time has revealed that this paint is still in excellent condition after twelve years of service, and that there is no deterioration in the pipe line, due to the protection afforded by the paint. The line is approximately fourteen miles in length, and part of it runs through a soil of high alkalinity. This paint has given complete satisfaction, and demonstrated to me that it offers the best protection for steel pipe of any paint which has ever been used on our work. It is our opinion that there is no paint manufactured at the present time which is better suited for the protection of natural gas pipe lines."

Supporting this experience-testimony of Mr. Benham is the analytical report of the Kansas City Testing Laboratories (see letter and report reproduced at left).

We shall be glad to submit samples and quote prices, on request.

Cook Paint & Varnish Co.

Factories: Kansas City—St. Louis—Fort Worth—Houston—Cincinnati

Branches: Chicago—Detroit—Omaha—Wichita—Oklahoma City—Tulsa
Dallas—Denver—Kansas City, Kans.—St. Joseph, Mo.

Say you saw it in The OIL WEEKLY

New Relief Valves

BLACK, SIVALLS AND BRYSON, INC.

Black, Sivalls and Bryson, Inc., Bartlesville, Oklahoma, announce a new line of valves said to be adequate to protect any tank from excessive pressure or vacuum.

Each valve combines in one unit a pressure valve and a vacuum valve.

This unit also forms the gas tight hinged lid of the thief hole opening.

The valves are made in two styles: The gas-tight thief valve for use on large storage tanks as well as on ordinary lease tanks, which relieves at one inch pressure or vacuum, and the vapor pressure thief valve for use on the higher pressure tank, which relieves at 16 ounces pressure and one inch vacuum.

More information can be had by inquiring about the devices, from the company.

New Reid Engine

JOSEPH REID GAS ENGINE COMPANY

An enclosed type two cycle gas engine, designed particularly for use in fields where there is much dust and sand in the air or in other installations where a totally enclosed engine is desirable, has been added to the Reid line of oilfield machinery by the Joseph Reid Gas Engine Company, Oil City, Pennsylvania. This new type engine which is designated as type C is built in two sizes, 40 and 45 horsepower. With the exception of the complete cylinder, including piston and combustion head, the two sizes are identical and the parts are interchangeable. The 40 horsepower cylinder can be used on the 45 horsepower and the 45 horsepower cylinder on the 40 horsepower if desired.

The engine incorporates a number of features among which are: enclosed bed plate; splash lubrication for the crank shaft, connecting rod, cross-head and and cross-head pin bearings; bored cross-head guide; replaceable, steel-backed, babbitt-lined main bearings; new governor of Reid design, enclosed and running in a bath of oil; and new intake valve located on the top of the cylinder.

Another feature of design in the engine is the unit mounting in one case of the governor, Wico igniter and cam, force feed oiler, eccentric and the governor oil circulating pump. The lay shaft being made in two pieces and coupled together by a flange coupling, permits the entire assembly to be removed without disturbing the adjustment of the driving gears.

The lay shaft is driven by helical gears from the crank shaft and is supported by bronze bushed bearings, entirely enclosed and running in oil. Mounted on the lay shaft are the cam for operating the Wico magneto, and an eccentric for operating the governor oil pump and force feed oiler, the governor driving gear, and on the outer end, a cam for operating the automatic air starter valve.

The governor is a new Reid design. It is located directly beneath the fuel valve eliminating any complicated levers, and driven by means of bevel gears from the lay shaft.

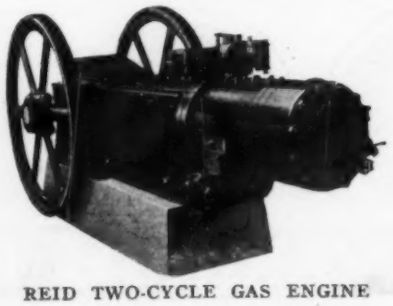
The mechanism is entirely enclosed and runs in a flood of oil, the bottom of the case being used as an oil reservoir, from which a small plunger pump cascades oil over the moving parts. A simple speed adjusting arrangement is provided, allowing the governor to be set for any desired speed while the engine is running.

Three separate oiling systems provide lubrication. The main bearings, wrist pin, cross-head, cross-head pin bearing, and connecting rod are lubricated by splash from the main oil reservoir in the bed. A Manzel force feed oiler supplies fresh oil to the cylinder at three different points, top and each side. The governor, Wico cam, and the governor end lay shaft bearing are lubricated from a plunger pump in the governor case, which has an oil reservoir as part of it.

The standard reverse rig furnished on the engine comprises a three and three-fourths-inch shaft, 24-inch friction band clutch, 30-inch diameter brake wheel, 20-inch face pulley with choice of diameters.

For driving heavily loaded band wheel powers, or any other work requiring one-way motion, the Reid cut-off type rig can be furnished. This rig has a four and one-fourth-inch shaft, two pedestal bearings, 24-inch friction clutch, either shoe or band type, 20-inch face pulley with choice of diameters.

Further particulars can be had from the company, on request.



REID TWO-CYCLE GAS ENGINE

New Paraffin Cleaner

NEUMEYER & SON

Neumeyer & Son, Morris, Oklahoma, announce a paraffin cleaner designed to clean paraffin from wells without removing the tubing.

This cleaner may be placed in the rods and left there as part of the pumping equipment. A standard box and pin holds the cleaner in working position.

When in place the cleaner must pass below the paraffin level.

The cleaner is comprised of a stem having means whereby the same may be incorporated in the pumping rod. The upper and lower spiral scraping blades are formed on the stem and these blades being coiled in opposite directions, are said to assure a clean scraped tubing wall.

Additional information can be had from the company on request.

NEUMEYER PARAFFINE CLEANER

Single Jaw Tongs

BILLINGS AND SPENCER COMPANY

The Billings and Spencer Company, Hartford, Connecticut, is marketing an improved type of single jaw chain tong for use on drilling rigs.

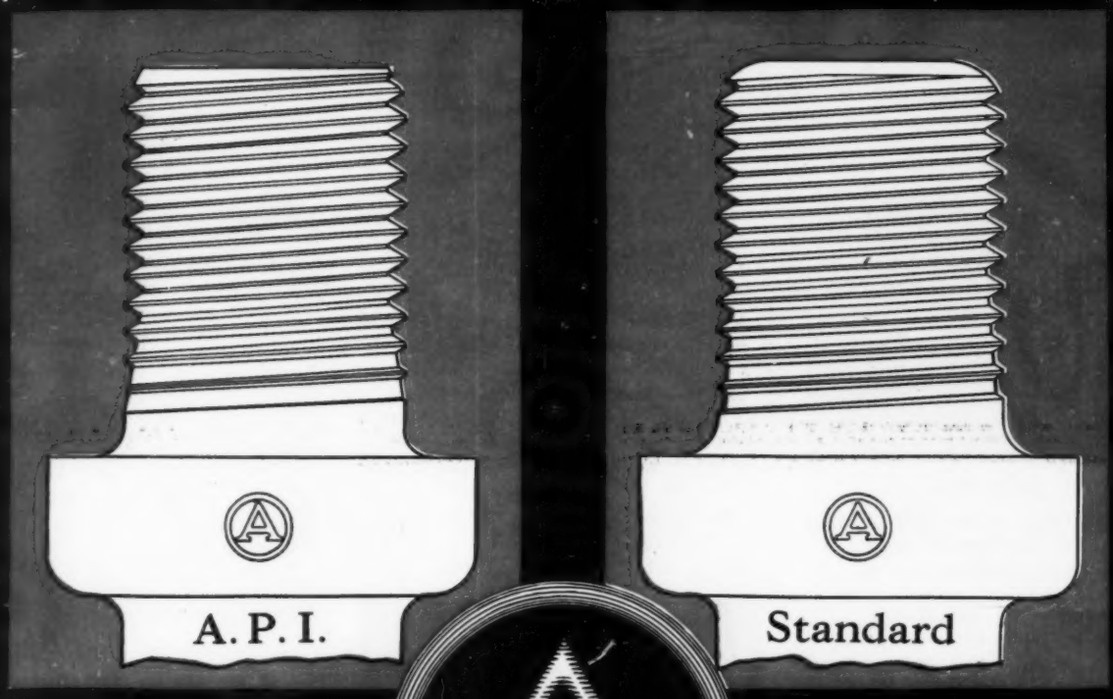
Maximum strength for the severe strains to which tongs are subjected has been obtained with the wide biting surface on the side jaws. The jaws being closer together provide a grip for the smaller fittings such as elbows, nipples, etc.

The chain is made of Billings oversize chrome nickel master link. The shallow recess for the chain pins makes the tongs easy to release.

Chain pins are hardened and tempered and upset after assembly. The handle and jaws are drop forged from special steel, and the shape of the former provides a comfortable grip with maximum strength.

These tongs are made in all standard sizes.

Both are Good



because

this mark is on them

The protecting symbol (A) is the identification of quality in Sucker Reds. It symbolizes 35 years of *specialization* in pump and rod making. When you select A. P. I. Rods see that the Axelson imprint is upon them . . . for your protection. We are now on *full production* of Axelson A. P. I. and Standard Sucker Rods.

AXELSON MACHINE COMPANY

World's Largest Exclusive Manufacturers of Pumps and Sucker Rods

P. O. Box 447, Los Angeles Tulsa, St. Louis, New York City

Mid-Continent Distributors - - - Frick-Reid Supply Co.

Eastern Distributors - - - Frick & Lindsay Co.

THERE IS NO ECONOMICAL SUBSTITUTE FOR QUALITY

Copyright 1926 Axelson Machine Co.

AXELSON SUCKER RODS

Say you saw it in The OIL WEEKLY

Improved W-K-M Products

W-K-M COMPANY, INC.

The W-K-M Company, Incorporated, Houston, announces a number of new products of interest to oil operators.

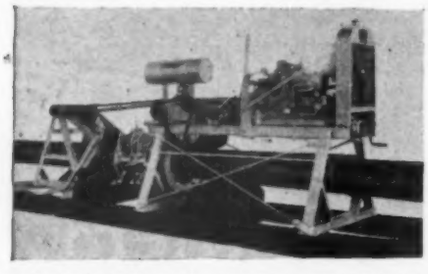
Split Drum Winch

The split or double drum front end winch is the same as the regular W-K-M heavy duty oil field winch, except that the drum is split into two distinct spooling drums. The outfit is well adapted

SPLIT DRUM WINCH

for general hoisting work, such as tank erecting, for drag line scraper work, such as preparing tank foundations and embankments, etc.

The left-hand is the low speed pulling drum, while the right-hand is the high-speed return drum. The pulling drum has a line speed of 110 feet per minute. The return drum has a line speed of 255 feet per minute. Each drum has a capacity of 1100 feet of half-inch line. The low speed drum is rated at 10,000 pounds pull on a single line, and the high speed drum is rated at 4000 pounds pull on a single line.



STATIONARY BASE FOR PIPE CLEANING MACHINES

Stationary Base for Pipe Cleaning Machines

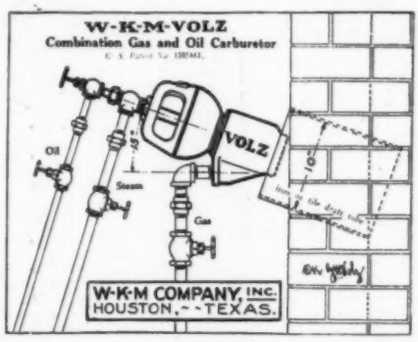
In order to meet the requirements of many large pipe line and oil companies which have on hand in storage yards large stocks of used pipe, the stationary base pipe cleaning machine has been developed. It is equipped with pipe-feed mechanism and adjustable pipe rollers, suitable as a mounting for the traveling type of W-K-M pipe cleaning machine, on stationary cleaning work.

It is claimed that when mounted on a stationary base, the traveling type pipe cleaning machine will clean from 150 to 200 joints of pipe per day, ranging in size from 12-inch down to two-inch, depending on the type of machine used.

W-K-M Volz Combination Oil and Gas Carburetor

The improved type of carburetor-burner, burns either gas or oil or both together.

The carburetor can be switched from gas to oil, or vice versa, without loss of



steam pressure or time. The unit is called a carburetor because either wet gas, dry gas or oil is broken up and atomized. It is said that the carburetor is efficient on low draft or in conjunction with steam or compressed air, with gas at four ounce pressure upward, or with the lowest grade of fuel oil.

Bulldozer on Model "F" Tracks

In order to obtain maximum traction on rough or soft ground, thus permitting the

BULLDOZER ON MODEL "F" TRACKS

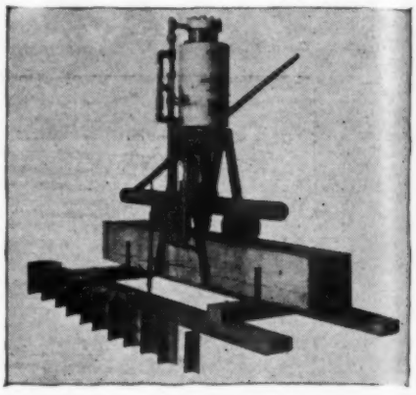
back-filling of oil or gas pipe line trenches under adverse conditions, the W-K-M Bulldozer was adapted recently for use with the Fordson tractor equipped with model "F" Trackson Full Crawler.

Improved Pipe Straightener

Three new features, perfected during 1927, distinguish the improved W-K-M Pipe Straightener. These are a detachable cylinder head, which permits easy replacement of piston leather cup; a packing gland at the base of the cylinder which eliminates leakage of oil which is forced past the piston; and a special pipe shoe retaining head, which will take any one of 12 different sizes of pipe shoes for straightening 12 sizes of pipe, two-inch to eight-inch.

Pipe Laying Boom on Model "D" Tracks

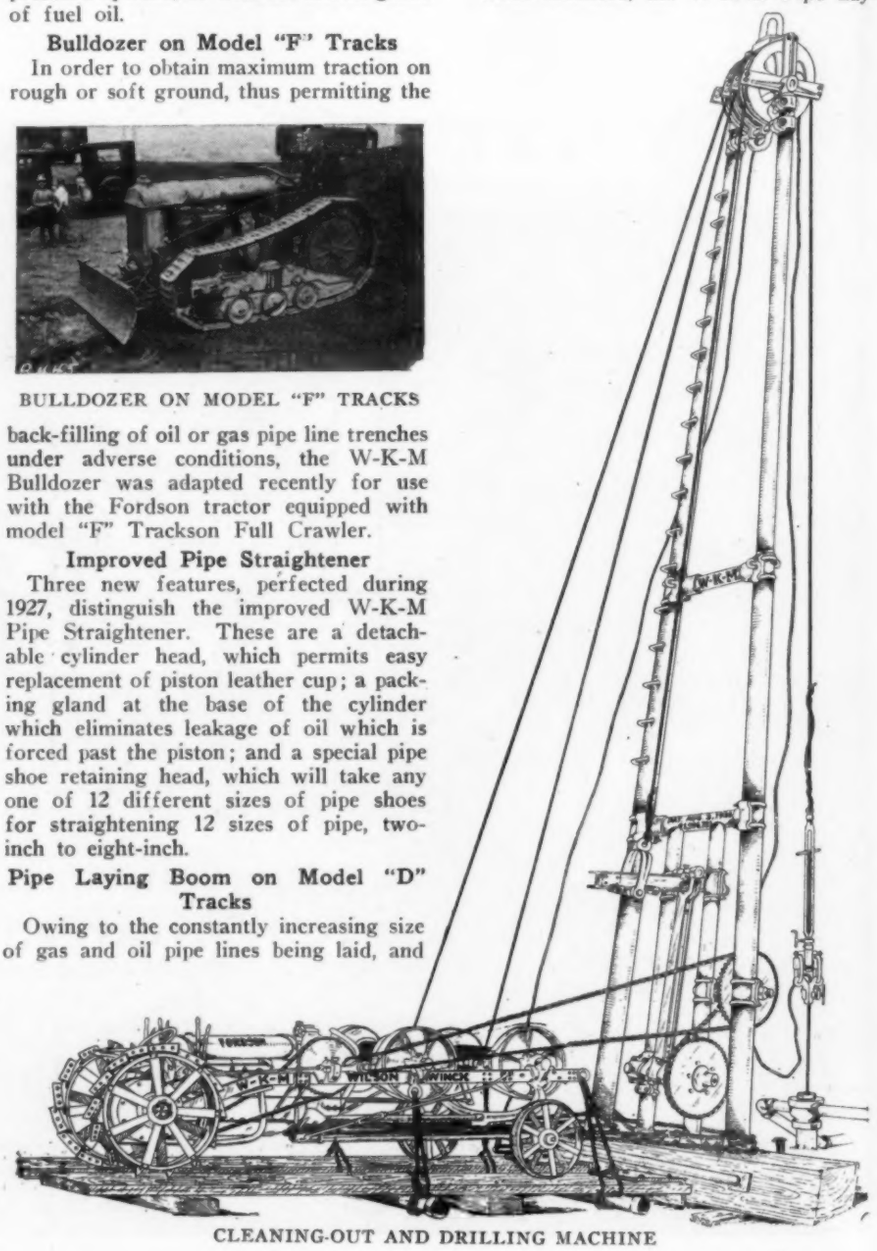
Owing to the constantly increasing size of gas and oil pipe lines being laid, and the increased weight per joint of the pipe being used, the W-K-M Pipe Laying



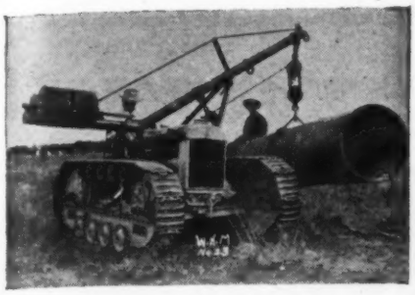
IMPROVED PIPE STRAIGHTENER

Boom, powered with the W-K-M Side Winch, was adapted during 1927 for use with the Fordson Tractor equipped with Model "D" Trackson Full Crawler.

Thus mounted, the W-K-M Pipe Lay-

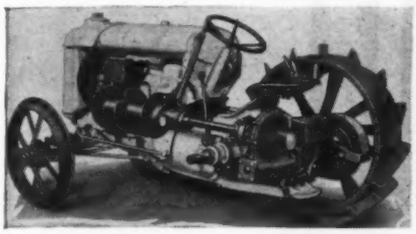


CLEANING-OUT AND DRILLING MACHINE



PIPE LAYING BOOM ON

ing Boom, it is said, easily raises and carries 3500 pounds of pipe or other material. With this increased capacity, the largest sizes of gas pipe are easily handled by the boom. Large valves and other fittings are also conveniently and quickly raised and lowered into place.



IMPROVED SIDE WINCH

Improved Side Winch for Fordsons

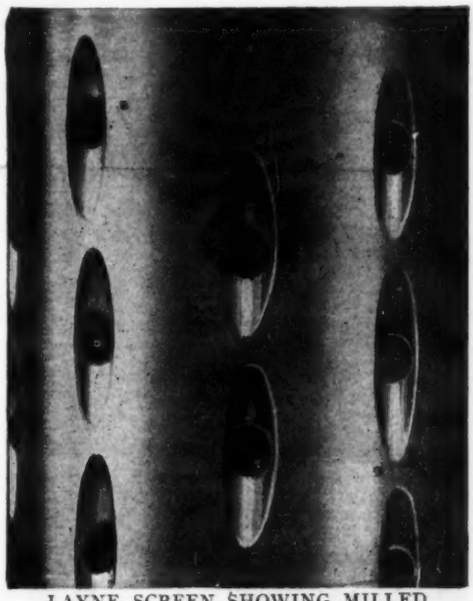
The improved side winch is used principally to furnish power to the pipe handling boom and for back-filling work. The improved winch is conveniently located and has positive control, assured by increased brakes.

Clean-Out and Drilling Machine

The drilling machine is said to be capable of swinging a set of 6⅝-inch or larger drilling tools, giving them motion.

The drilling machine is driven from the countershaft of the Double Drum Winch, and speed may be regulated exactly in accordance with requirements. The machine is ruggedly and substantially built. Tubular members are used in the construction of the mast.

The W-K-M Double Drum Winch provides one drum for handling the tools, and one drum for handling the bailer. The mast is equipped with a set of large from point to point. The Double Drum Winch moves under its own power, being mounted on a standard Fordson tractor.

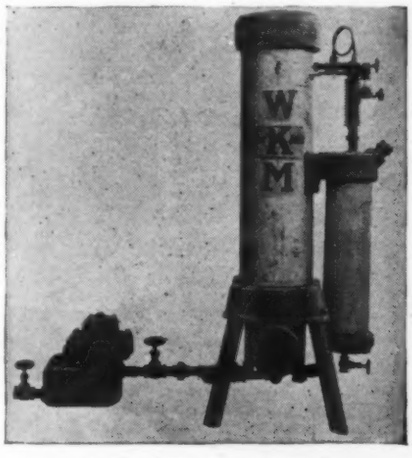


LAYNE SCREEN SHOWING MILLED GROOVES

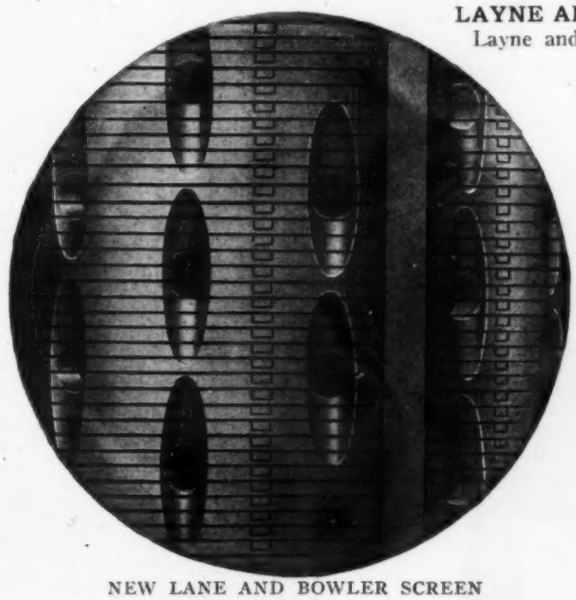
Volz Steam Separator

The Volz steam separator was designed to overcome the problem of heavy condensation in steam lines. The separator is said to provide correct lubrication of engine and pump cylinders at all times, and oil atomized by the automatic lubricator cannot flush out.

More detailed descriptions on all these items can be had through communication with the company.



VOLZ STEAM SEPARATOR



NEW LANE AND BOWLER SCREEN

New Type Layne Screen

LAYNE AND BOWLER COMPANY

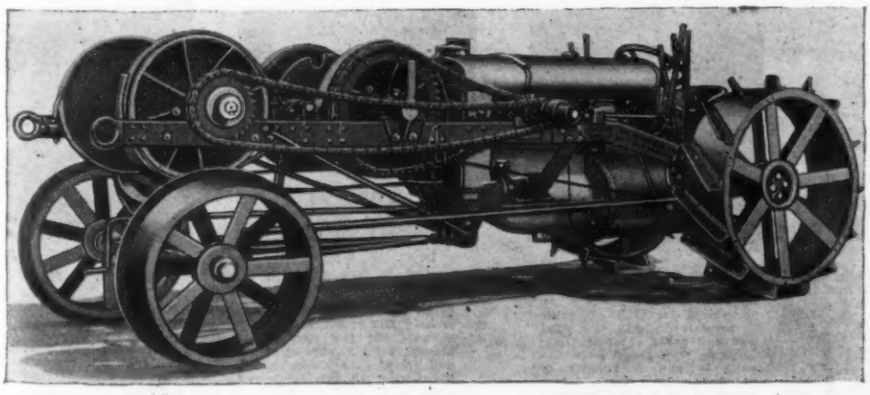
Layne and Bowler Company, Houston, announces a new type of oil and water well screen.

The major change in design has to do with the holes in the pipe over which the usual Keystone wire-wrapped screen these holes have been straight drilled holes, but on the new design a milled groove slot sloping into regular hole in the center is used.

The milled grooves are so spaced that the drainage distance between the Keystone wires is very short, providing a quicker flow and minimizing the danger of openings becoming clogged with mud or sand.

The milled grooves are cut so that there is a separate groove for each hole, thereby making the feeding area uniform.

Grooves are milled lengthwise with the screen body and are only slightly wider than the diameter of the drilled hole.



CLEAN-OUT AND DRILLING MACHINE

Portable Buildings

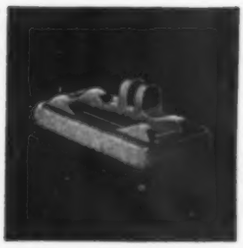
SOUTHERN MILL AND MANUFACTURING COMPANY

A new type of construction for sectional buildings especially designed for the oil industry has been brought out this year by the Southern Mill and Manufacturing Company of Tulsa. The company makes all types of portable houses and buildings, such as residence for oil camps and for towns,

The Simplest Clamp with

1

3



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B
R
B.E.R. Pat'd.
B.E.R. Pat'd.
B.E.R. WIRE LINE CLAMP Mfg. by ACME FISHING TOOL CO. PARKERSBURG, W.VA. Pat'd. July 8, 1919
B.E.R. WIRE LINE CLAMP Mfg. by ACME FISHING TOOL CO. PARKERSBURG, W.VA. Pat'd July 8, 1919
B. & R. Pat'd.
ACME

B & R CLAMP PARTS

1

SLIPS—(or liners)—Deep grooves for cable; held in place by dovetail design—not set screws; easily removed; interchangeable; only part of the clamp that wears; extra sets of slips for any size line carried in stocks conveniently located.

2

LINKS—Special titanic design giving large factor of safety; all links are forged; no link has ever been broken in service.

3

Left hand ARM—Note the safety handle which saves many a smashed finger and makes closing and opening a very simple matter.

4

Right hand ARM—Holds clevis and Tee screw which slides freely on Clevis Pin. By simplicity of arrangement clamp can be closed and locked with one hand. Finger at top keeps the line true while hitching on.

5

BACK LINK—Designed rugged enough to give balanced strength to the entire clamp.

8

9

6

SLIP RETAINERS—Are an additional set of Slips; make it possible to grip the sand line and cable at same time; valuable time-saver when desired to run a bumper or knock the tools loose. Also handy to hitch onto the sand line to jerk the bailer loose.

7

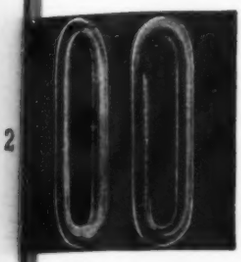
BOLTS—Two long bolts serve to hold slip retainers securely in position; two short bolts connect arms at rear of clamp and act as hinges upon which the Clamp swings open and shut.

8

BACK CLAMP PINS AND CLEVIS PIN—Two pins hold the arms securely to the Back Link, yet provide flexibility of arm movement without sacrifice of strength or rigidity.

...ith the Greatest Gripping Power

The B & R Wire Line Drilling Clamp Is Insured for your protection



B & R Clamps are sold on an insurance plan that only the very highest quality would permit.

We will replace or exchange any part broken within 90 days from date of purchase, absolutely FREE and pay the cost of freight delivery.

B & R Clamps Don't Break

Acme Fishing Tool Company

Parkersburg, West Virginia

Export Office: 136 Liberty Street, New York City, N. Y.

Warehouses and Distributors:

Acme Fishing Tool Co.—Parkersburg, W. Va.
Acme Fishing Tool Co.—Okmulgee, Okla.
B. & A. Specialty Co.—Tulsa, Okla.
Acme Fishing Tool Co. of Texas—Whittenburg, Texas.
Acme Rental Tool Service Co.—Graham, Texas.
Acme Tool Co.—Breckenridge, Texas.
Acme Tool Co.—Albany, Texas.
Acme Tool Co.—Brownwood, Texas.
Acme Tool Co.—Cross Plains, Texas.
Acme Tool Co.—Fry, Texas.
Acme Tool Co.—McCamey, Texas.
Acme Tool Co.—Pyote, Texas.
Midland Iron Works—Billings, Mont.
Great Northern Tool & Supply Co.—Kevin, Montana.
Great Northern Tool & Supply Co.—Kemmerer, Wyo.
Great Northern Tool & Supply Co.—Cody, Wyo.
Elms Bros. & Co.—Waynesburg, Pa.
Klingler & Mitchell—Emlenton, Pa.
Lloyd, Smith Company—Bradford, Pa.
Logan Foundry & Machine Co.—Logan, Ohio.

For Quick Delivery Mail This Order to the Nearest Acme Distributor

ACME FISHING TOOL CO.,
Parkersburg, W. Va.
Please send me from your nearest stock.....sets of B. & R. Wire Line Drilling Clamps with liners for .....inch line. This order is given with the understanding that any part or parts that break, within 90 days from date of purchase, will be replaced or exchanged without cost to me.

Charge to:
Company .....
By .....
Address .....

Ship to:
Name .....
City.....Co..... State.....

9
CLEVIS—Perfectly tapped — permitting Tee Screw to work with ease. Heavy and Strong to withstand all shocks encountered in drilling.

10
TEE SCREW—Perfectly threaded; generous handle; transmits a gripping leverage to the slips in the ratio of ten to one.

Say you saw it in The OIL WEEKLY

NEW TYPE OF PORTABLE OIL FIELD HOUSE

lease houses, warehouses, dining rooms, garages and field offices.

A greater sturdiness of construction has been obtained by thickening the side walls of the portable houses and increasing the size of the joists. An improved feature is the use of a spline between all sections, having the effect of more securely anchoring them together as it makes the joints absolutely tight and both weather-proof and dust-proof as much so as in the construction of a residence or large building.

Every part of the sectional house or building is constructed in sections, including the roof, ceiling, floors and side walls. This makes the building virtually 90 per cent salvable as they can be knocked down and moved without difficulty.

Further information may be obtained by communicating with the company direct.

Improved Line Clamp

WESTERN SUPPLY COMPANY

An improved Crotto Climax wire line clamp has been developed by the Western Supply Company of Tulsa who are manufacturers. The clamp is distributed through supply companies.

WESTERN SUPPLY COMPANY'S IMPROVED LINE CLAMP

The Crotto clamp has interchangeable, interlocking liners with tempered set-up screw with interchangeable, reversible set-up nut and is equipped with weldless, non-fouling links. The clamp has three jaws, one fixed in the housing, the other two being integral with the right and left arms. All liner seats are machined and in addition there are separate machined grooves (other than the liner seats) for gripping sand lines. All wearing parts are provided with adjustment for insuring long life. The liners on the clamp automatically adapt themselves to a perfect contact on the drilling line. The links on the Crotto clamp are of "goggle" type weldless non-fouling that can be readily removed if necessary. It is heavy enough for deep well drilling and also is successfully adaptable for drilling machines.

Further information may be obtained by communicating with the company direct.

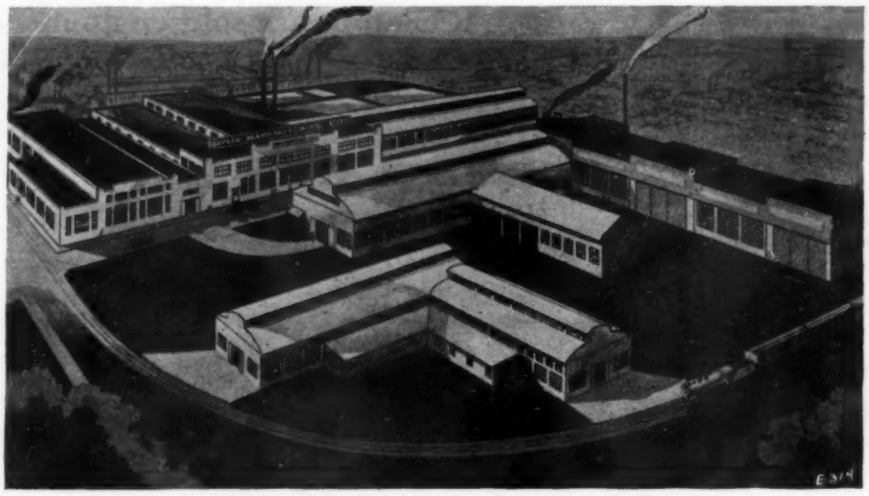
Butler Company Adds Many New Buildings

BUTLER MANUFACTURING COMPANY

Kansas City.—Butler Manufacturing Company, of this city, and Minneapolis, has recently completed an extensive enlargement and building program which greatly increases the facilities of the organization.

The new buildings are of the type made by the company.

The original building of the new group was finished a little more than a year ago and was used for the assembling, loading and shipping of products in less than carload quantities. An extension 90 by 204 feet has been added, to be used as a welding department and a store room for raw materials.



NEW BUTLER MANUFACTURING COMPANY BUILDINGS

At right angles to the new structure another building has been added, making an L shape extension, to house the sand-blasting department.

An extension was also built to a steel building put up three years ago, which will be used to house equipment belonging to the Glover Sales Company, a division of Butler.

In addition to these, another L shape building of two wings has been completed to take care of the steel barrel factory.

Al the new buildings have monitors. Windows in the monitors are controlled by sash operating devices. Concrete floors are used throughout. An overhead trolley has been installed for handling heavy material.

Additional ground was bought and track facilities for 30 cars were built, giving a total capacity of 60 cars.

Mexican Petroleum Company Gets Decision in Mexican Oil Law Test Case

Mexico, City.—In the first decision involving the new petroleum law which went into effect last January, the Mexican Supreme Court has ruled unanimously in favor of the Mexican Petroleum Company, an American concern. Through the decision the Department of Industry, Commerce, and Labor is restrained from canceling certain of the company's drilling permits.

The court also declared unconstitutional the important Sections 14 and 15 of the new law as far as this suit was concerned. Section 14 in effect substitutes fifty-year concessions for oil land titles asquired before 1917. Section 15 forfeits titles to oil lands for which no application for confirmatory concessions had been made within one year from the effectiveness of the new law.

The fact that the Supreme Court's first ruling upon the new petroleum law should be unanimously in favor of the contention of one of the many foreign oil companies which have suits pending against the law is interpreted by many observers as of the utmost significance and as indicating the policy the court may follow in the other cases.

The decision is not one declaring the entire petroleum law constitutional or unconstitutional. Furthermore, the two sections, which are declared unconstitutional in this particular suit, are not in blanket terms declared unconstitutional for all purposes, but only as they apply to the Mexican Petroleum Company in the issues presented in this case.

Entering Wedge

Thus the court's decision does not once and for all answer the question as to whether the new oil law is constitutional, but those well informed think that it is an entering wedge for a series of similar decisions, which, if made, would remove the features of the law which have been most objectionable to foreign interests.

The issues in the present case were as follows: The Mexican Petroleum Company filed in the lower courts a suit for an "amparo"—equivalent to either a mandamus or an injunction—against the Secretary of the Department of Industry, Commerce and Labor, which has charge of the enforcement of the new petroleum law. The basis of the suit was that the Department of Industry had canceled under the new law drilling permits previously granted to the petroleum company in a section of the Panuco district, State of Vera Cruz.

The department maintained that revocation of the permits was made under Articles XIV, and XV of the law. The company asked that these sections be declared unconstitutional and the department restrained from enforcing their provisions and from canceling its permits.

The case reached the supreme court upon appeal. The court unanimously granted the company's application, issuing an injunction against the department in the concellation of the drilling permits and declaring that in this case Articles XIV and XV were unconstitutional.

No written decision was given out, but one has been written and some time in the future the text will be made available to the public.

Text Not Given Out

Attorney Jose Louis Acevedo, secretary to the supreme court, gave to the correspondent of the Associated Press the preceding synopsis of the official test of the decision, which text, he said, could not be given out at present.

He added that the supreme court would go into vacation in a few days, and therefore no further decision in similar cases which are pending may be expected immediately.

The new Mexican petroleum law, which went into effect January last, is based on the theory of the Constitution of 1917, that natural resources belong to the State.

The law required that foreign oil operators should apply before December 31 of last year for concessions confirming rights and titles acquired before 1917. Foreign-owned oil lands for which concessions were not asked before January 1 may be assigned to other claimants.

The American government has held that the law is confiscatory, and the foreign oil companies have opposed it from its inception.

Total acreage owned by the company in Kansas City is more than nine acres of which over five are under roof. The Minneapolis branch controls five acres, three of which are under roof.

The Butler Manufacturing Company has had a remarkable growth. Started in 1901 by C. R. Butler, chairman of the board of directors, E. E. Norquist, president and general manager, and N. W. Butler, it has grown to its present size.

The first product was galvanized steel stock tanks. Today the regular line of manufactured products ranges from hog troughs and feed pans to tanks as large as 55 feet in diameter with a capacity of 10,000 barrels, ready-made steel buildings, with a clear span up to 100 feet in width, and various other products.

Employees number more than 600, and Butler products are sold in all parts of the world.

McKeever Goes Back to Oklahoma Iron Works

Tulsa.—R. S. McKeever, who has been manager of sales for the International Supply Company here, has returned to the Oklahoma Iron Works of Tulsa as sales manager and has already assumed his new duties.

The Oklahoma Iron Works manufactures oil field equipment that is distributed through all supply companies and the business of the company is extensive both in domestic and foreign fields. J. W. Sloan is president of the Oklahoma Iron Works, J. R. Sharp is vice president and A. F. Bourne is secretary and treasurer.

Pawnee County

Tulsa—Turner et al's Smelser 1, in the southwest of the northwest of section 29-20-9, Pawnee County, flowed three barrels of oil an hour and an estimate of 500,000 cubic feet of gas daily from sand encountered at 1045 feet and drilled in to 1074 feet. It was being deepened late last week.

Humble Building Pipe Line to Hendricks Field

San Angelo, Texas.—Humble Pipe Line Company is assembling materials for the immediate construction of an eight-inch welded pipe line from its tank farm site in the Hendricks field, Winkler County, to Monahans, where the crude will be loaded in tank cars and shipped to the Gulf Coast. This pipe line unit will require about 18 miles of pipe, and will probably be extended through to McCamey, where connection will be made with Humble's West Texas trunk line system, as soon as the first section is put in operation. About 70 miles of line will be required to build from McCamey to the Hendricks field, and some ten-inch pipe is to be used, according to present plans.

Humble has two 64,000-barrel steel tanks completed in section 8, block B-12, Winkler County, and ran the first oil into these tanks last week following the completion of a 2500 barrels producer by the Humble Oil & Refining Company. In addition to taking care of this production, Humble Pipe Line Company will take a limited amount of oil for purchase from the operators without pipe line and storage facilities in the Hendricks field. The field is now served by Southern Pipe Line Company, which recently cut off all outside connections not protected by contracts, and the American Petroleum Company, Houston. The latter is taking outside crude only on contract for a long period below the posted price applied to the field, and at present is serving only two producing interests in the field. Atlantic and Roxana are building into the field to take care of their own production, while several independent lines are proposed for immediate construction from the field to the Texas Pacific Railroad. Gulf has elected to add more steel tanks to its Hendricks field tank farm for the time being instead of invading the field with a line to take its own oil after its crude delivery contract with Southern expires late next month, and has purchased four 80,000-barrel tanks to be erected on the same tract where a pair of 80's were built last summer.

Anticlines on Nequoia Arch, Green River Desert, Utah

By H. C. PROMMEL
Consulting Geologist, Denver, Colorado

WHILE much has been written about the Moab region, including the Colorado River structures, Elk Ridge Anticline, the Lisbon Valley Anticline, Indian Creek Anticline, Cedar Mesa Structure, Boundary Butte Anticline, and other anticlinal structures in Utah, and drilling activities thereon, little has been said about the Nequoia Anticline of the Green River Desert region, 50 miles south of the town of Greenriver, Utah, and 40 miles west of the Colorado river structures.

This region is of historical, as well as geological interest. Many old cliff dwellings are found here and some of the finest hieroglyphics and Indian paintings are found on the sandstone walls of Barrier Canyon. At a later time the Spaniards traversed the southern part of the Green River Desert on their way northward from old Mexico. Their trail, known as the Spanish Trail, which leads from the lofty Green River Desert plateau across the precipitious cliffs of Wingate sandstone into Elaterite Basin and thence over the rugged outcrop of the Coconino sandstone to the edge of Cataract canyon where it descends in step-like fashion over sheer walls of the Rice and Hermosa formations into a Cataract canyon proper, has been rebuilt by cattlemen of this region. It has been a means of escape of many a cattle rustler. At a later time the Green River Desert was the meeting place of many highwaymen engaged in the business of holding up Denver and Rio Grande Western pay roll trains, and robbing of coal mining camp payrolls along the railroad. After such episodes they made their escape into the Green River Desert where their tracks were soon covered by desert winds. Many localities in the desert today carry names referring to the activities of some of these early invaders, such as "Robber's Roost," "Blue John Spring," "Observation Rock," "Dead Man's Hill," and others. These men had permanent camps at the springs in the desert which furnish unusually good water. The old stone corrals used by them at Sweetwater Springs can still be discerned. Robber's Roost was one of their favorite meeting places where many hilarious unheard of parties were held. At a later time Joe Biddlecome, one of the early cattlemen of southwestern Colorado, invaded the Green River Desert. Joe tells many interesting stories about the early conflicts between cattle raisers in Southwestern Colorado where competition became too strong for him. This made him look for other quarters and he now reigns supreme over the greater part of the Green River Desert. Outside of the Du Quesne Association camp and a small dugout formerly used by Wolverton and now a cache of the Chaffin interests, Joe's headquarters near Robber's Roost is the only habitation in this region.

Early Prospecting

With the exception of the San Juan field, along the San Juan river in southern Utah, the earliest prospecting and drilling for oil was done at and near Elaterite Basin on the Nequoia Anticline. This work dates back to 1912, when Colonel Charles P. Tasker, Salt Lake City, Utah, commenced the drilling of a test, known as the Des Moines well. This test is situated in section 19, township 26 south, range 13 east, well down on the flank of the Sweetwater Anticline of the Nequoia Arch. Colonel Tasker was attracted to this region by the numerous outcrops of oil saturated sand which he prospected over a large area. At that time machinery was hauled by horse and wagon and the trip from Greenriver to the well location required over four days. Colonel Tasker recites the following story:

While his men were hauling machinery both men and teams became exhausted during the fourth day of their travel. They decided that one place in the desert might be as good as any other to drill a well, dumped off the machinery, built camp and started drilling. The intended location for the well was near a location made by Prommel and Crum on the Flattops Anticline during their later work in 1926.

At about the same time E. T. Wolverton, E. M., had spent several years pioneering this general section. Wolverton, accompanied by L. M. Chaffin of Greenriver, Utah, started a survey of the major portions of the Green River Desert, and located oil placer claims in Elaterite Basin where seepages of oil were found along the outcrop of the De Chally sandstone. Although the bringing of a Star rig to be used in drilling assessment holes presented almost insurmountable difficulties the feat was accomplished. Assessment holes were drilled and the rig is still standing in Elaterite Basin. Small quantities of oil were encountered in these assessment holes, all of which started in the saturated De Chelly sandstone.

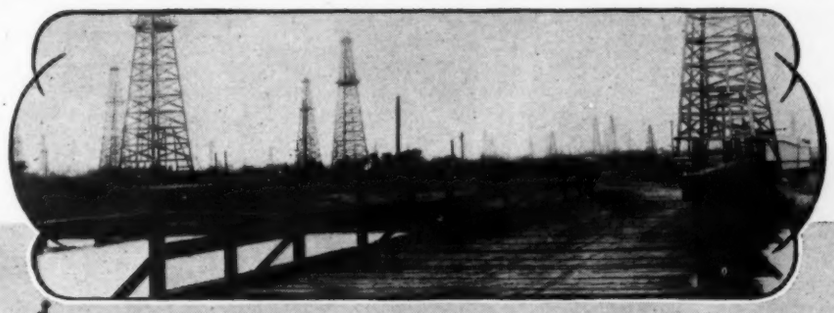
The Des Moines well encountered showings of oil and gas at 2160 feet where a 12 foot oil sand (De Chelly) was encountered. At 2400 feet a sand (Coconino) 180 feet thick showed some high grade oil, and some gas. At 2750 feet two more oil sands were encountered. At this time the well was being drilled with the hole full of water which precluded the obtaining of any definite knowledge regarding the possibilities of these sands. At 2910 feet work was suspended. The drilling was done with a Star machine. The Des Moines Company expended about $33,000 in the drilling of this well.

After the first showing of oil was obtained in the Des Moines well in 1913 another company drilled the Mount Vernon well in section 4, township 27 south, range 12 east, about six miles southwest of the Des Moines well and also way off favorable structure. Little is known about this well. It is reported to have encountered similar oil sands to those drilled through in the Des Moines well. On the strength of the showings obtained in these wells the Du Quesne Association, composed of W. L. Curry and associates of Pittsburgh, Pennsylvania, located approximately 93,000 acres of land in the Green River Desert, under the United States mining law petroleum placer act, during the year 1913. Annual assessment work on these claims has been maintained to date. No actual deep test has been made on these placers. The annual assessment work comprises a number of shallow holes and pits, as well as road construction. Under the petroleum placer act a report as to logs of wells or showings found is not required, so that information of the operations of the Du Quesne Association is not available. The holdings of the Du Quesne Association are located in townships 25-26 south, ranges 12-13-14 east, Salt Lake Meridian.

These old placer locations have recently been disregarded by the public who have made oil and gas prospecting permit locations on top of the old placer locations. It is doubtful whether the old placer locations will be considered valid by the federal government, as they should have been changed into oil prospecting permits a long time ago.

After the oil and gas leasing act became effective, February 25, 1920, oil and gas prospecting permits were applied for over a part of the Green River Desert covering the area from Elaterite Basin on the east to Sweetwater Spring on the west. Prior to

(Continued on Page 318)



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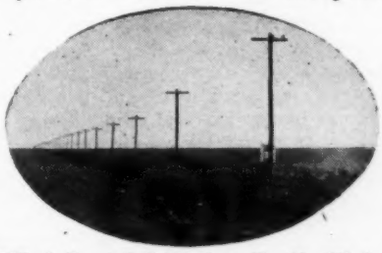

"Black Beauty" Poles along Humble Oil & Refining Co.'s pipe line near Freeport, Tex.

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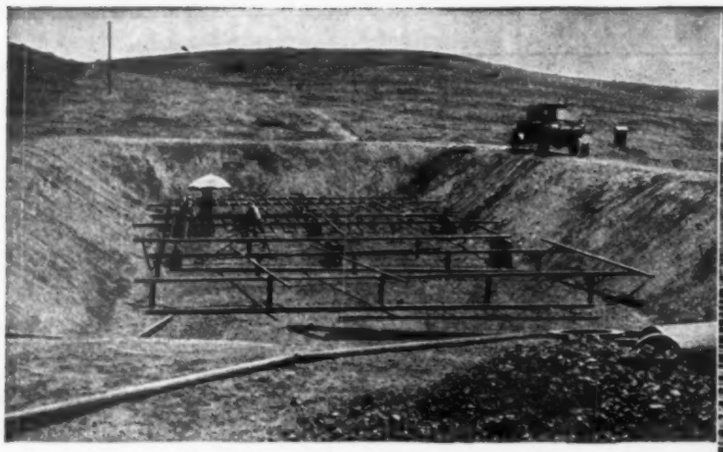


Fig. 1—Steam Coil and reservoir.
Fig. 2 (right)—Close-up of fabricating work.

Welded Pipe in Tank Heater Construction

How an oil heating outfit was made, in California, largely through the use of a welding outfit is told in Oxy-Acetylene Tips, for September.

Recently a new field located about forty miles from the main camp was brought in. When the oil was analyzed, it was found to be of such low gravity that it would have to be heated before it could be pumped through the lines to the main gathering lines. Hurried installation of a heating system might have been a serious problem had not the engineers been familiar with the possibilities of the oxy-acetylene process.

A large earthen reservoir was dug out and banked, during which orders were sent in for pipe, oxygen and acetylene generator. The generator was mounted on a motor truck so that all the necessary equipment could be moved from place to place quickly.

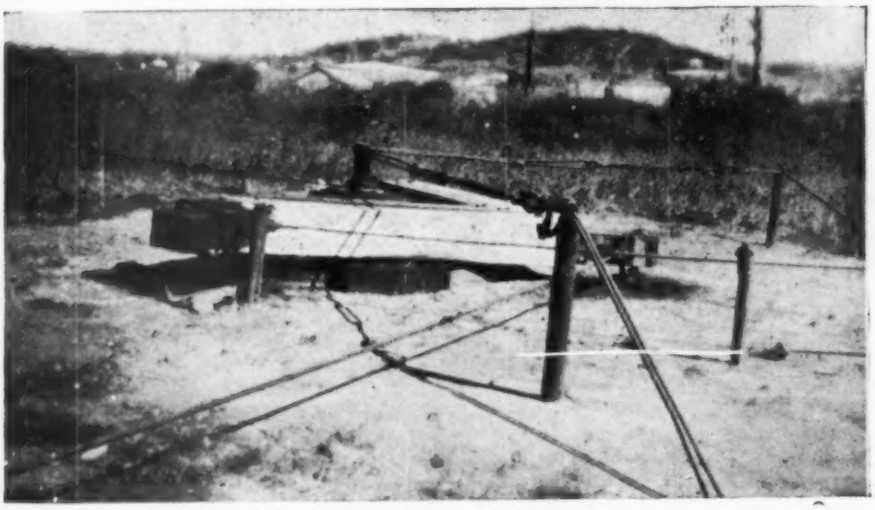
As shown in Figs. 1 and 2, three large steam coils were fabricated from the pipe with welded joints throughout.

Pipe stands were first constructed to hold the steam coils about two feet from the ground when in use. These stands also came in very handy during the welding of the pipes to the headers. The ends of the pipe were cut to shape by a cutting blowpipe, ready to weld into the .headers Holes were cut in the headers where the coil fitted in. After blocking the headers in position, the coils were moved into position one by one, and the joints welded into permanent tightness.

After all three coils had been completed, steam mains were put in and connections welded to each header. Return mains were welded on the opposite sides, and the remaining open ends of the headers were closed by welding.

By careful leveling of each coil, it was possible to place it so that the condensed steam would run down into one corner, either to be removed from a sump or to pass into a return line with the exhaust steam, thence to a condenser or a separator, and back to the boiler.

The welded heater was completed in a very short time, and the now fluid crude oil was soon on its way to the refinery, warmed by heat from the steam passing through the coils.



A TYPICAL SWING JOINT AT GLENPOOL FIELD, OKLAHOMA, WHERE RUGGED TOPOGRAPHY CAUSED ITS FIRST APPLICATION IN 1907.

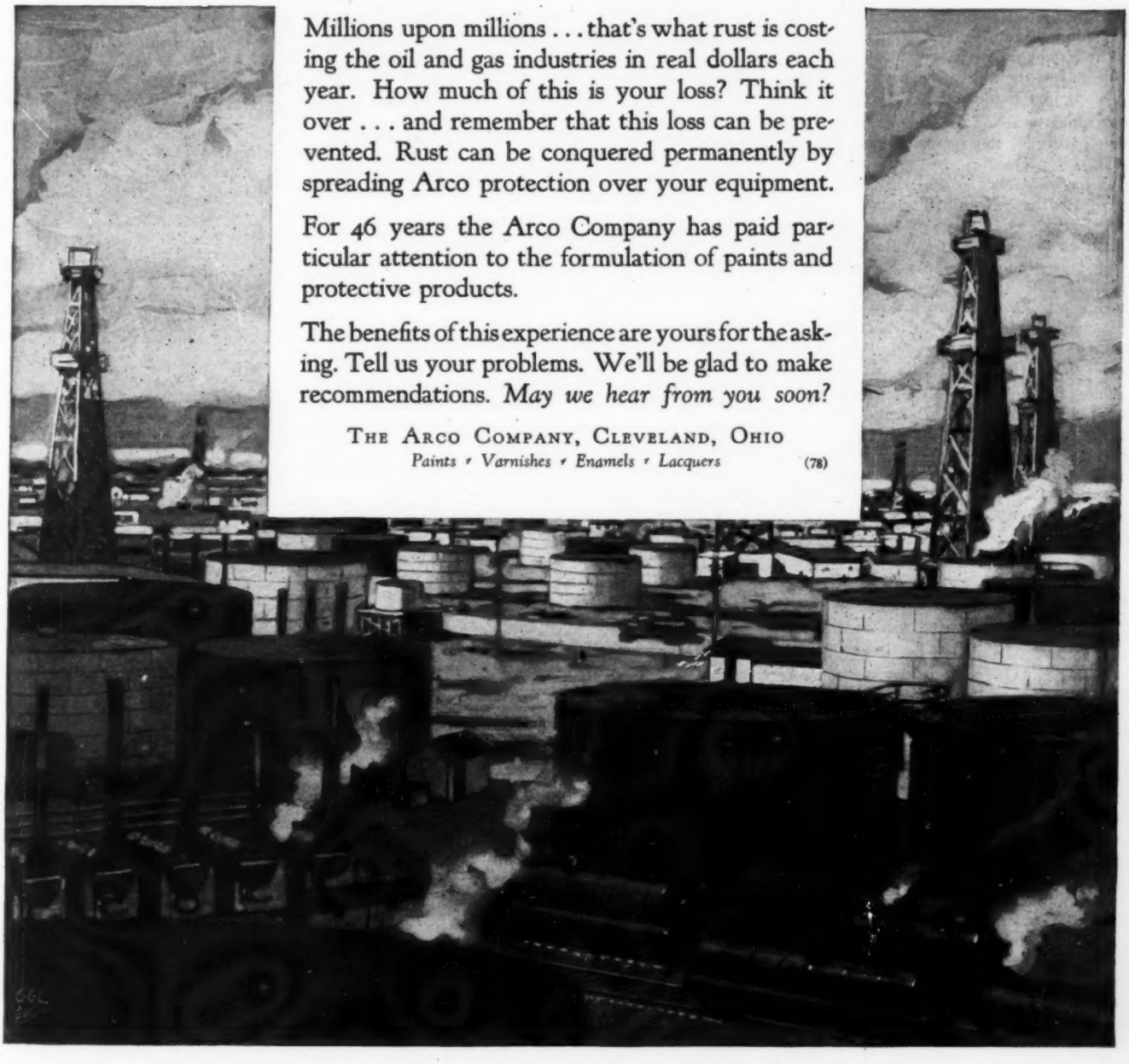
Swing Joint Simplifies Central Power Pumping

Necessity was truly the mother of the invention of the old swing joint, the coming of which greatly simplifies the problem of pumping off a central power by shackle lines. The triangle swing joint is reputed to have first been introduced in Glenpool field, Oklahoma, in 1907. It solved the problem of pumping a string of wells located in inconvenient spots on hillsides, among large trees, around slopes and on gulley banks.

While the triangle swing joint is common throughout the Mid-Continent territory, it is seldom seen in many of the other producing sections. A swing lever for simply cutting a small angle in a shackle line is common almost everywhere production is found, but shackle lines being run in every direction from a single line working from the central power is rarely found. In certain cases in the Glenpool field, where the rugged topography makes it hard to find a straightaway for any distance, a line is run south, hooks to the swing joint, turns east, and from the "L" position of the triangle method turns north to pump a well which otherwise could not be reached by the shackle line due to obstacles in the path direct between the power and this well.

The swing joint found at Glenpool today is most modern. A three to four-inch steel rod acting as a central post, fits into a steel plate, which holds the central strength of the triangle of usually 12x14-inch lumber, and short cuts of casing of the size required act as bearings on which the triangular joint rolls back and forth with the movement of the shackle rod from the power.

By Protecting the Surface *You Protect all*



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Trade Commission Ready to Report Reasons for High Prices

Senate will have results of inquiry covering 1922-25 early in present session; report also covers Texas Panhandle cut

By Staff Correspondent

WASHINGTON, D. C.—A report on the Federal Trade Commission's investigation of petroleum prices, called for under a senate resolution adopted June 3, 1926, will be submitted to congress in the near future, it is indicated in the annual report of the commission, just made public.

Practically all of the data necessary has been gathered, the report shows, and the work of preparing the analysis of the situation is progressing. "The broad scope of the resolution, as well as the complicated character of the industry, which embraces crude petroleum production, pipe line transportation, petroleum refining, and the distribution of petroleum products to the consumer," it is pointed out, made it impossible to complete this inquiry in a satisfactory manner before the close of the last session of congress."

The senate resolution, pointing out that "very material advances" had been made in the price of crude oil and petroleum products, called upon the commission to investigate and report whether such increases "were arbitrarily made and unwarranted" and whether there had been any understanding or agreement between various oil companies or manipulators to raise or depress prices or to prevent effective competition, as well as the profits of the principal companies during the years from 1922 to 1925 inclusive.

Questionnaires

Questionnaires were sent out to producers, refiners and marketers of petroleum products, the report states.

From the organization questionnaire were obtained the extent of common holdings of stock among different companies of the Standard group, among different independent companies, and among independent and Standard companies, also the names and addresses of officers, directors, and of stockholders having the largest 50 stock holdings.

From the statistical questionnaire were obtained data on acreage of oil lands owned in fee or held by lease, the quantity of crude petroleum, gasoline, and other petroleum products produced and held in storage; the prices paid for crude and the prices charged for gasoline and other refined products f.o.b. refinery, and for tank wagon and service station delivery in all parts of the country.

From the financial questionnaire were obtained data on investment and profits for the years 1922, 1923, 1924, 1925, and the first half of 1926.

The data on methods of distributing gasoline and other petroleum products, and the methods of making and announcing price changes for crude petroleum, gasoline, and other petroleum prices were secured by representatives of the commission from officials of the large oil companies and others. Information concerning the method of handling local competition and the general policy of the sales departments of the large Standard marketing companies and certain large "independent" companies was obtained by conference with the sales managers and from examination of their correspondence files. The minutes of the annual meetings and of the boards of directors of Standard marketing companies and of certain large independent companies were examined to ascertain the facts with respect to the ownership and control of each company and the extent to which stockholders personally vote their own stock A record was secured of the number of stockholders present in person at each annual meeting and of the stock voted by proxy.

The facts with respect to local competition in numerous parts of the country were secured by representatives of the commission calling upon wholesale dealers, service station operators, and representatives of large marketing companies conversant with the facts. Record of court proceedings in cases between different oil companies and data secured by certain State officials were studied to ascertain the competitive practices in use in different sections of the country. Conferences were also held with officials of a large number of oil companies, at which many facts with respect to all phases of the oil trade were secured.

The broad scope of the resolution, as well as the complicated character of the industry which embraces crude petroleum production, pipe line transportation, petroleum refining, and the distributon of petroleum products to the consumer, made it impossible to complete this inquiry in a satisfactory manner before the close of the last sesson of congress.

Investigate Reduction

The commission also reports upon its inquiry to ascertain the reasons for the reduction made last fall in the price of petroleum by the purchasing companies, undertaken in response to a request by producers in the Panhandle field of Texas in October, 1926, giving the following summary:

As a result of careful investigation among large and small operating companies, whose combined production comprised more than 70 per cent of the current output of the Panhandle field, it was found that prior to the latter part of July, 1926, the oil was purchased upon a gravity basis. Crude oil testing 28 degrees to 28.9 degrees gravity brought $1.35 per barrel, with an addition of 5 cents for each full degree in gravity up to 39 degrees gravity and above, for which the maximum price was $1.90 per barrel. This schedule of prices applied to the field in general. Following the action of a minor purchasing company which, on August 1, 1926, abandoned the gravity price system, substituting therefor a flat price of $1.25 per barrel for crude petroleum produced in Hutchinson and Carson Counties, two of the major purchasing companies on September 22 and 24 posted a flat price of $1.25 per barrel for crude oil produced in Hutchinson and Carson Counties. A similar course was adopted October 4 by the remaining purchasing company. This brought the matter to an issue. At that time the daily production in Hutchinson and Carson Counties was around 120,000 barrels, which was equivalent to 95 per cent of the total output for the Panhandle field.

On one hand, particularly among the smaller producers, there was a strong belief that they were being imposed upon, and allegations of discrimination as compared with prices paid for Oklahoma and North and Central Texas crude petroleum were made. On the other hand, the purchasing companies declared that the Panhandle crude was abnormally high in paraffin and sulphur content, thus making it more difficult to handle in pipe lines and refinery operations, and because of these unusual charactertistics there was no demand for the oil among refiners. Furthermore, what was deemed highly objectionable was the fact that the producers were pushing drilling operations and increasing the production at a time when pipe line and storage facilites were inadequate to handle the output.

After thorough investigation of the situation it was found that only a few of the smaller producers had taken the precaution to erect storage tanks to care for the new production, and drilling operations had increased the output to a point far in excess of the pipe-line and storage facilities of the few purchasng companies that were attempting to handle the oil. Prorating the quantity of oil taken from each producer was resorted to, and this afforded some relief to the smaller producers. The general congestion in the

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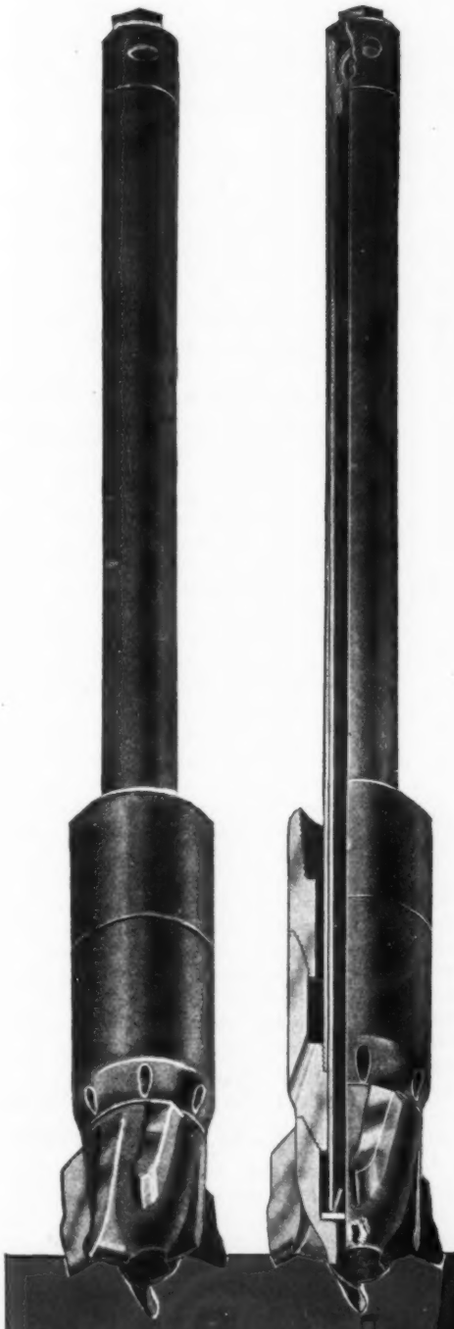

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field was further relieved by curtailing drilling operations.

There were ample railroad facilities for shipping the oil to distant points, but there was an obvious shortage in field storage tanks and in gathering pipe lines to move the ol from the wells to railroad loading racks. The larger and more experienced producing companies erected tanks and installed gathering lines to handle their own production, and they also gave all possible assistance to neighboring smaller producers, but the greatest difficulty was in providing adequate facilities to accommodate all those that desired an immediate market and constant service in moving the oil from the wells.

As regards the reasons for reducing the price of the product, inquiry among the few refineries that had experience in refining Hutchinson County oil developed the opinion that because of its peculiar character it was more difficult to handle and more expensive to refine than crude produced in other fields. With respect to the properties of the Panhandle crude petroleum, a report of recent analyses by the United States Bureau of Mines states that "The crude oil now being produced in the recently discovered Panhandle field of Texas has gained the reputation of being a difficult crude to refine. This is largely due to the fact that the oil contains sulphur compounds which are difficult to remove from the gasoline and other products. The crude as produced usually contains a small amount of emlusified water, which should be completely removed in the field, as it is corrosive to refinery equipment and the high wax content of the oil causes it to congeal in storage tanks and pipe lines and makes it difficult to transport during cold weather."

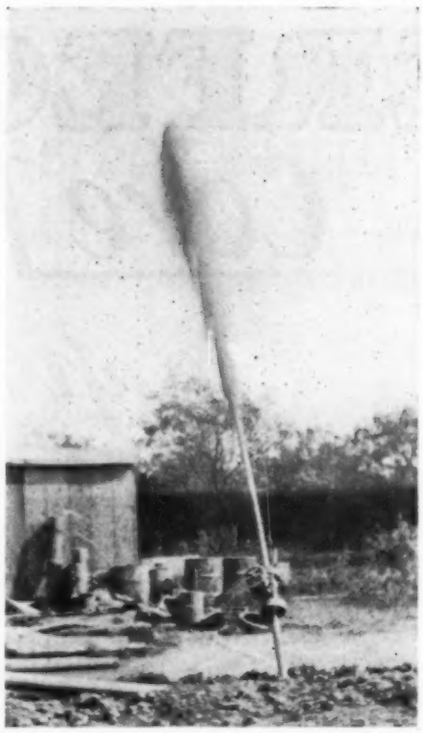
Safety and Cleanout Equipment Featured in Gas Field
(Continued from page 83)

control and tubing head equipment. One and one-half inch tubing was used in this well. Water was pumped through the tubing, thinning up the mud. Soon the pressure began building up in the well, and it began cleaning itself, all valves being closed except one which allowed the mud and water to be blown out of the tubing. Within four hours the well had cleaned itself, flowing through a one-half inch choke. After the mud and water had been blown out, the pressure was 950 pounds.

W. C. Andrus of the Houston office of the Regan Forge & Engineering Company, co-operated with Mr. Wade in installing the tubing and tubing head equipment used in the Sellars 3 and the Cartwright 20. He has also induced the Houston Oil Company and the Cole Petroleum Company to use tubing and equipment as mentioned above in gas wells in the Cole field of the Laredo district.

Camp Facilities

The Lucas field is in a hilly country covered with mesquite and chaparral trees and prickly pears. The wells are on both sides of the Nueces River, which runs through the field. A suspended bridge about two feet wide spans the stream for the use of workers crossing back and forth by foot.



GAS WELL WHICH HAD QUIT PRODUCING, BLOWING MUD AFTER BEING ROCKED WITH GAS

The field office of the Houston Oil Company is at Mt. Lucas, a little station on the San Antonio, Uvalde & Gulf Railroad. At Mt. Lucas also are the residences of the workers of the field. About 30 men are employed in the production end of the work, and about 15 or more in the pipe line end.

Although it is isolated in a rough and sparsely settled country, where ranching is the chief industry, outside of the gas field, the town of Mt. Lucas, which is entirely a town for the workers in the Lucas gas field, is attractive and offers various conveniences. Gas produced in the field is used for lighting and for heating and cooking. Running water is provided by pumping it from a well into a tank mounted on a high stand, and piping it from there to the residences, which are neat frame houses.

In one of the buildings the Houston Oil Company operates a place where those workers who wish to do so may eat. The meals are excellent. The quality and the variety of the food served would do credit to any dining room.

Southeastern Colorado Tests Planned

Denver, Colo. — Southeastern Colorado's development will be encouraged this season by the drilling of two test wells on the geological theory that that territory is a continuation of the Amarillo-Panhandle uplift. Marland Oil Company of Colorado has announced its intention of drilling on Freezeout structure on section 8-30-50 in Baca County, and of drilling another test in Las Animas County, the location for which, if spotted, has not yet been announced. Reiter-Foster Oil Corporation is expected to start operations soon on its holdings in the Red Rock and Johnny Creek districts in Las Animas County. Johnny Creek is in township 28s, range 52w, in the northwestern part of Las Animas County, 12 miles northwest of Freezeout in Baca County. Red Rock structure, which is supposed to be location of the Marland's second test, is in the vicinity of townships 28 and 29, ranges 55 and 56.

Because of its bearing on the situation in Southeastern Colorado and the potentialities thereof, the Parker Club, Inc.'s Adams 1, section 32-34-56, in Las Animas County near Branson, is being watched with particular interest by operators. It is reported to be drilling below 3668 feet with 2800 feet of water standing in the hole.

Propose Gas Rate Raise At Shelby, Montana

Shelby, Mont. — Montana Public Service Commission will be in session in Shelby November 29 to hear argument against an order to show cause why Shelby's gas rates should not be reduced. The Great Northern Utilities Company, in answering the order recently, contended that an increase in rates was necessary if it was to receive a fair income over investment and expenditures.

In the meantime, Shelby business men are determined to bring about a substantial reduction in the gas rates of the community and are incorporating the Citizen's Gas Company, which will pipe gas from the field into Shelby.

The Shelby Oil & Gas Company, owner of the Houdek 1, which was to have supplied the newly formed Citizens Gas Company with gas, is reported to have sold the output of the well to the Northern Natural Gas Company for transmission to Great Falls.

Logan County Well Makes 20 Barrels Hour

Tulsa—Welsh, Acton & Brown's Hall 1, in the northeast of the southeast of section 11-18-4w, Lovell field of Logan County, made 20 barrels an hour after being deepened three and one-half feet to 4768½ feet in the Layton sand. The Layton was previously topped at 4750 feet and after penetrating the sand a few feet began making approximately 100,000 cubic feet of gas daily. After deepening the hole filled with 3500 feet of oil and cleaned itself out for the production.

Bulletin Announcement

Waukesha Motor Company, Waukesha, Wisconsin, announces a new bulletin which shows installations of Waukesha super-duty engines driving rotary rigs, air compressors, line pumps, and slush pumps.

All the illustrations are from photographs made from installations in Texas and Oklahoma.

Reconditioning Pipe Line Without Stopping Service

Empire crew is scrapping, patch welding and painting eight-inch line without shutting down, some sections being replaced

IN its job of reconditioning a 25-mile link between Walnut station and Winfield, Kansas, of its eight-inch trunk line, which during the past 12 years has moved millions of barrels of crude, the Empire Pipe Line Company is demonstrating an excellent example of economy now being practiced in the oil industry. Furthermore, its accomplishment of perfecting this type of workover job without interrupting the regular services of the line in moving the oil is a fine example of engineering skill rapidly coming to the front in the industry.

The 25-mile link was badly in need of repairs, and yet the crude had to keep moving through it to the refineries, so the work of reconditioning the line has been carried on between flows through the line, and in many instances while the oil was being moved. In places where the pipe was a total loss from corrosion pits and had to be replaced by new sections, the crew has worked by schedule, co-operating with the dispatcher on the line, to remove such sections, complete the job and turn back the pipe in time to permit the passage of crude.

The job is being handled practically altogether by Empire men and equipment, the pipe line department co-operating with other departments in detailed problems. Measurements are being made at points where the line traverses farm land in order to submit the accurate scope of damages. Diagrams are being made on each completed section for the engineering department. Portable camps are used on the job, and are moved along with the progress of the line, keeping within a short distance of the center of operations. The job of reconditioning is in charge of C. A. Mason, district foreman for the Empire in the Kansas district.

Raising Operation

The old pipe is being uncovered by a ditching machine, which straddles the line as spotted by the right-of-way crew, and runs under its own power. This machine clears a ditch to within one inch of the pipe without scraping the line or even the collars, except in unusually rough places. All of the line, with the exception of eight miles, is laid in a highway, where, due to widening of the road since the laying of the original line, the pipe is being laid now in a new ditch. In this case the work necessitates the uncovering of the old line by men with shovels and sharpshooters while the machine is used to dig a new ditch on right-of-way recently purchased by the company.

The job of raising the old pipe is being handled by means of Wheatly Brothers' tripods, the use of which incidentally has given the company only one minor casualty, and that only a pinched finger. As a section is lifted, strong wooden skids are placed under it and the tripods are moved down the line for another section. During the times when the line is carrying oil under high pressure, strict care is necessary to prevent breaking at a worn collar. By use of the tripods the pipe can be raised very uniformly, preventing a strain.

A W-K-M cleaning machine follows the pipe-raising gang. With this apparatus a revolving head with steel cutters and brushes removes all undesirable material from the pipe except around the collars, which are cleaned by hand with wire brushes and files. Where a rough flange is encountered the machine can readily be removed and then replaced on the line.

Following the cleaning work the inspection crew takes up the job, checking up on pit holes. This crew uses a Lincoln stable arc welding machine, with a Buda gasoline engine, connected with an electric generator, furnishing the power. Where pits are not too large or numerous they are filled by means of welding while the line is running oil at full capacity. In cases where the line is not considered worth welding it is marked "cut out," and left for the replacement gang.

The replacement crew, which follows the inspection and welding crew, cuts out ruined joints or sections with an oxy-acetylene torch. Old pipe that is salvageable is placed together, where possible through proximity, and the new pipe is kept in single sections, which methods are cutting down work and costs in the future in case of another reconditioning job on the line.

The Empire crews have run up against some hard problems on the job. Since the old line was laid 12 years ago the highway has been changed in many places, leaving bare pipe standing in high embankments, thereby doubling the chances of breaks. In such places the crews are now following a right-of-way far enough from the highway to assure them no future trouble from widening of the roads. Here also the crew is using an evil to correct an evil. For instance, where the line had been bent previously for sags or overbends, these same sections are picked out now for such turns that are found necessary, and thus the job of fitting the new or used straight pipe to curves in the right-of-way is eliminated. About 10 per cent of the old pipe has thus far been found in need of replacement. The line is cut in sections of about 12 joints for removal. In cases where bending the reconditioned sections is found necessary the Empire crews are using a new method; that of using clamps on the line together with a hydraulic jack with the aid of two men, who by this method can fit bends better and in less time than under any old methods they have tried. The welders who cut the line are also "tacking" it back together after replacement. Then the cleanup welders finish up the job.

Painting

The Empire is using Biturine primer and enamel for painting the line, giving it two coats. The primer is applied with a rug with long nap, cut into 18-inch strips in width and about four feet long. The paint is poured on the rug, which is laid underneath the line as well as on the top. Two men then work the rug with a rotary motion, applying the primer evenly to the whole surface, and completing the job by this means about as fast as they would ordinarily walk. The primer is left five hours to dry, and then the coat of hot enamel is applied in the same manner, except for the use of canvas strips instead of the rug strips. The enamel paint is cooled within a minute after application. Following this method of painting the line is protected, except for possible pin holes and small areas inside of the collars, which places are gone over with a brush.

The pipe is lowered by the paint gang by means of the tripods, and heavy pads of rubber or canvas belt are placed around the pipe to prevent scarring the enamel. Care is also taken to leave slack enough to allow for contraction in cold weather. In places where the soil contains rocks or gravel particles, which might cut the paint job, smooth dirt is used as the initial filler before the backfilling job is started.

The backfilling job is done by contract by use of a tractor with a side winch and a six-foot backfilling board. Under normal working conditions more than half a mile of ditch is refilled daily by this method.

In spots where the pipe is found to be badly pitted, samples of the dirt are being taken by the Empire for a chemical analysis, thus working for knowledge probably of value in the future in line laying.

In overhauling the line while it is filled with crude the amount of work possible for completion in a given time is estimated and the dispatcher is notified to run the proper amount of water between the two high points in the section to be reconditioned, and the line is turned over. Gate valves have been installed in three completed sections so that less water might be handled each time, and also to prevent losses in case of a line break. The valves are to be removed on completion of the reconditioning job.

Anticlines on Nequoia Arch, Green River Desert, Utah

(Continued from Page 310)

this time T. C. Conley who had been active in Oklahoma, visited the region. He in turn interested some of his associates in Oklahoma, as well as some of the men from Iowa who had held interests in the Des Moines well and in the early Wolverton locations in Elaterite Basin. The outcome of T. C. Conley's early endeavors was the drilling of a well by the Union Oil Company of Utah in the southeast quarter of section 34, township 29 south, range 16 east. This well was later taken over by the Texas Production Company and finished at 2200 feet on April 4, 1824. The well did not find oil in commercial quantities in the De Chelly sandstone as this formation was encountered at a higher elevation than its outcrops on Green river and Fremont river. The drilling of this well took several years.

Activity Renewed

After the above well was abandaned, activities in the Green River Desert diminished and all those interested in the undertaking were ready to drop it. Conley hung on, however, until December, 1925, when the Frank Shafer well on the Cane Creek Anticline blew itself in. This event renewed activities throughout southeastern Utah. A chance meeting of T. C. Conley and H. W. C. Prommel took place during March, 1926, in Denver, at which Prommel agreed to make a reconnaissance trip into the Green River Desert at a later date.

During May, 1926, Prommel and Conley started their reconnaissance. The geology of the region, entering it from Green River, is very misleading, and formations can easily be misinterpreted. W. E. Emery, of the United States Geological Survey, during his work in the Green River Desert, appears to have mistaken the Carmel formation for the Todilto formation. It was not until two weeks had been spent on horse back by Conley and Prommel that the relationship of the different formations to each other became clear to them. After spending another week exploring the region on horse back as far south as the junction of the Colorado and Fremont rivers a detailed survey of the Nequoia Arch was recommended by Prommel. This work was then taken up by H. W. C. Prommel and H. E. Crum, the latter spending the entire summer of 1926 in the field mapping in detail the various anticlines developed on the Nequoia Arch. The extreme summer heat made this work very tedious. Camps had to be established near springs and water holes which are very scarce over this region, and at times even water for the horses had to be carried in barrels over a day's journey to camp. The field work was completed in October, 1926, after which a month was required to write the report and construct the final maps of the region. The field work was greatly facilitated by Lou Chaffin and Son's (Green river, Utah,) intimate knowledge of the country. They served as guides throughout the work.

The Green River Desert region is of geological interest as the stratigraphy differs somewhat from that of the Moab region. This is pointed out in Dobbin's and other papers on the Moab region, as well as in the Press Bulletins of the United States Geological Survey by the same writers. The oil saturated De Chelly sandstone is absent in the Moab region. The Shinarump conglomerate is eroded over the top of the anticlines in the Moab region. The Rico formation from which production has been obtained in the San Juan field of southern Utah is also eroded on the anticlines of the Moab region. All these formations are present and underlie the anticlines on the Nequoia Arch at relatively shallow depths, and their saturated outcrops can be studied in the canyons tributary to Cataract Canyon of the Colorado River. There are, therefore, several possible oil horizons underlying the anticlines on the Nequoia Arch. From the top downward they are: The Shinarump conglomerate in which a good showing of oil was obtained in the Marland well five miles south of the town of Greenriver, and in which production was encountered in the Boundary Butte well in southern Utah. This formation lies 1300 to 1900 feet below the surface on the anticlines of the Nequoia Arch. The second horizon is the De Chelly sandstone which lies at depths of 1700 to 2300 feet below these anticlines. This sandstone is well saturated along 75 miles of outcrop flanking the Cataract Canyon region. The third horizon is the Coconino sandstone which lies at depths of 1900 to 2500 feet below these anticlines. It shows partial saturation along its outcrop and also showed saturation in the early wells drilled in this region. The Rico formation which is known to contain petroliferous sands in the San Juan field, lies at depths of 2400 to 3600 feet below these anticlines. The top of the Hermosa petroliferous shales containing possible sandstones, that is, the horizon at which oil and gas were encountered in the Frank Shafer well can also be reached underneath these anticlines at depths of 5000 to 5200 feet.

There are, therefore, five possible oil horizons underlying the anticlines on the Nequoia Arch of the Green River Desert. Fracturing and minor faulting is well developed and oil seeps occur along fractures on these anticlines at the surface, 1850 feet above the first probable reservoir bed underneath these anticlines.

Structurally the Nequoia Arch is a large plunging anticline which extends from Cataract Canyon of the Colorado river across the Green River Desert, plunging gently in a northwesterly direction toward the San Rafael swell. It is, therefore, ideally located with respect to possible gathering area, for it forms a structural ridge between the Uinta structural basin to the north and the Henry Mountains structural basin to the south. On this plunging ge-anticline the Flattops, Sweetwater, Wild Horse, Antelope, Horseshoe, and Barrier Creek anticlines, and Burr's Pass structural nose are developed. These favorable geological conditions for the accumulation of oil and gas in commercial quantities fully discussed in Prommel and Crum's report made it comparatively easy to interest some of the larger companies in this territory. The Texas Production Company, having assisted the Union Oil Company of Utah to finish their first well, had first choice within the area and they are now drilling a test well on the Sweetwater Anticline, on the Shipley permit, in section 5, township 27 south, range 14 ast. The well has reached a depth of 600 feet, but had to be partially back filled in order to straighten the hole. Before starting the drilling of this well The Texas Company did considerable road construction work and also built a bridge across San Rafael river. Water for domestic purposes is obtained from the Sweetwater Spring and water for drilling purposes has been piped seven miles from the Des Moines well. The installation of a booster pump along this pipe line was necessary as the water had to be raised over 350 feet to the test well location. While water is extremely scarce at the surface, subsurface water can be found at many places in the desert at depths ranging from 300 to 400 feet.

Negotiations for the drilling of a second test well are well under way, and location for such a test is now being made on the Antelope Anticline of the Nequoia Arch by one of the largest Mid-Continent independent oil companies.

The drilling of the two test wells on the Nequoia Arch will be watched with great interest. They will drill drill through formations which heretofore have shown signs of oil in isolated tests of Southeastern Utah. These oil bearing formations lie higher on the Nequoia Arch than on any other anticlines of southeastern Utah. If commercial production of oil is obtained, development of a large area in Southeastern Utah independent from that in which prospecting and development work has been pushed during the last two years will result.

Fire Out

Great Falls, Mont. — After having raged for about 48 hours the fire at the Hannah-Porter Oil Company's No. 3 Harte well in the Kevin-Sunburst field came automatically under control when the hole bridged and the tremendous pressure of gas was cut off. The fire consumed gusher production estimated from 5000 to 10,000 barrels of oil. The well is considered to be one of the largest ever completed in the field.

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EQUIPMENT WITH A SERVICE RECORD

Improved Core Barrel One Recent Operation Advancement

Latest type of core barrel is more properly a core drill which permits continuous coring and reveals much valuable information

By BRAD MILLS
Staff Representative

EVERY PIECE of rotary equipment used in California has done its part in developing the drilling of oil wells to its present high state; but it is safe to say that during the past five years, the core drill has done more to make rotary drilling a science than any other invention.

The use of the core barrel is comparatively new and, like many other rotary achievements, has been developed almost exclusively in California. California operators were the first to embrace the idea of coring wells on a large scale and to them must go the credit of tolerating it while it was new and accepting it after it was proven. It took more than three years for the core drill to win a definite place in the minds of the operators. Now it is considered as a most essential tool when any unknown formation is being cut.

The old single barrel type of core barrel was brought to California from Texas many years ago. It consisted simply of a short piece of drill pipe, with teeth cut on the bottom end. The old core barrel was used on the bottom of the drill pipe, replacing the rotary bit. The tool was rotated rather slowly until it was thought a core of sufficient depth was cut. The driller then added more weight, all the time increasing the revolution of the drill. In that way the teeth were bent inward, holding the core while the barrel was being drawn from the hole. The greatest problem with the old core barrel was the removal of the core without damage. The saw tooth core barrel usually did not bring up true cores, since it was impossible to keep the fluid sent into the hole from mixing with the specimen. In some cases the formation showed water when it was a comparatively dry sand. Even with its faults, the old core barrel gave the California operators a better idea of what they were doing, and it was the forerunner of a core drill which has become indispensable.

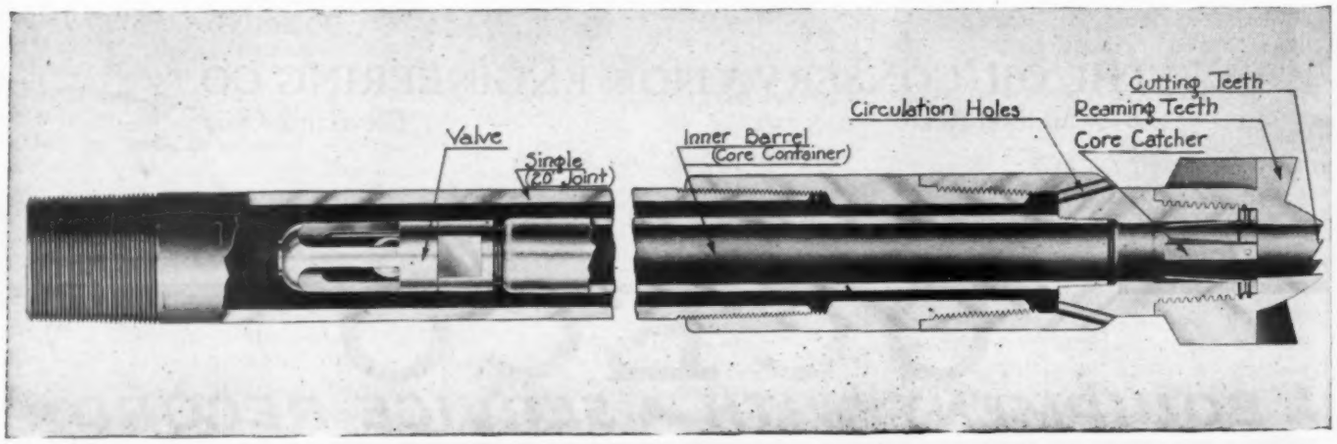
The new type core barrel is more properly called a core drill, for it readily takes the place of a fish tail bit when doing its particular work. It is used not only to obtain cores, but to drill as well. It really consists of two concentric barrels. The inner tube is used chiefly to protect the core after it has been cut, while the outer tube screws onto the drill pipe and constitutes the main body of the drill. The circulating mud fluid passes between the tubes, leaving by the way of small cutter holes near the bottom of the hole. The two barrels are joined near the bottom by the cutter body, which holds both the cutter catcher and the cutter head. The four reaming teeth somewhat resemble small fish tails, while the cutting teeth actually cut the core. In the new type, the mud fluid is conducted directly to the bottom of the hole without coming in contact with he core, which is brought to the surface in almost exactly the same state as it lies in the ground.

At Huntington Beach

In attempting to correlate the different sands in the Huntington Beach field, geologists were greatly handicapped. In some cases, there was evidence that the sand was rising and falling in different parts of the field. A correlation map showed the sand dipping and jumping in a rather sudden fashion. The core drill was put into action and it was found that the sand was not jumping around as thought, but, instead, several different layers of sand existed. By coring and analyzing in other parts of the field, it was found that the sand carrying water in the edge tracts were oil-producing a little farther inside the field. The early fact that they were found at comparatively the same levels, yet one carried water and the other oil, did not mean much. It was first thought that they were different sands, but in many cases, only one sand existed. The core drill did much to reconcile those inconsistencies.

It was in the Long Beach and Santa Fe Springs fields that the core drill played a particularly significant part. When the first wells were drilled, especially those around the edges of the fields, it was not unusual to finish a well in an altogether undesirable sand. On the other hand, fairly good sands were sometimes overlooked. The core drill was rapidly gaining favor and proved that by casing off the water in certain wells, it was possible to go deeper and secure production. It told the operators, at least, where not to stop, and indicated equally as well the proper level when the oil sand was found. Its success in both Long Beach and Santa Fe Springs definitely established it as an instrument of vital importance to rotary operations in California.

During the early months of the modern core drill, the manufacturers



LATE TYPE OF DOUBLE-BARRELED CORE DRILL DEVELOPED IN CALIFORNIA

maintained their own crews. The idea was still new and very few drillers could take good cores. The manufacturers were particularly anxious to show what their product would do and they hesitated to place it in the hands of inexperienced drillers. The first double-barrelled core drill, although embodying the same principles as the latest model, did not wear as well as the present ones and gave some trouble. With the present improved core drill, any up-to-date rotary driller can take good cores.

Use in Wildcats

Core drills formerly were used almost exclusively in proven fields. It was thought too expensive to use them on wildcat wells. Now, they are used at frequent intervals in practically every wildcat in the State.

The fact that the latest core drills are designed to make hole has been a big point in their favor. The Julian Petroleum Corporation used a core drill exclusively in drilling from 1900 to 5500 in a wildcat near Hermosa Beach. The company started "feeling" for oil sand at a comparatively shallow depth and continued to bottom at about the same rate as it had planned with rotary tools.

The Chanslor-Canfield Midway Oil Company used a core drill in its deepest of all tests in the Brea-Olinda field. The hole, which was by far the deepest ever drilled by man, was drilled and cored to 8201 feet. The company used the core drill at many different depths and the final one foot of hole resulted in an almost perfect specimen. The reaming teeth were almost completely worn out in making the 8200-foot journey, but the cutter teeth came to the rescue with a good core—the deepest ever taken.

The deepening campaign at Long Beach is being waged almost exclusively with core drills. The deep formation in that field is not one solid sand. A few feet of good oil sand will be followed by a streak of shale, and, in some cases, even a water streak. The operators are coring and carefully analyzing every specimen to determine the best level for finishing their wells.

The leading operators in the Los Angeles area almost universally agree that the use of the core drill in and near the oil sands is very essential. A well-known oil executive, when contacted by the writer, remarked:

"The large number of productive sands in the Los Angeles basin should be attributed to the success of the core barrel. Without it, many sands never would have been found. In the Dominguez field, the oil sand was penetrated completely and the hole carried far below the producing level. The operating company did not know it had an oil sand. Later the field was discovered by another company by drilling a hole only a short distance from the abandoned well. If the core drill had been used, the company drilling the first well would have discovered the field. As it was, the drill rushed through the sand and mudded off the oil flow.

OLD TYPE SINGLE-BARREL CORE DRILL

"By carefully coring one or two wells on a lease, it is often not necessary to core so extensively in other wells. The whole thing is just like a picture, unless there is an unusual faulted condition or the sand is especially tricky. It is never a bad idea to take cores when drilling is about to stop. The core drill tells you when to stop as nothing else can. It takes the guesswork out of drilling. Where we formerly drilled in the dark, we can now detect the slightest water in the formation. The use of the core drill makes drilling a positive and scientific business.

"We recently completed a well in the Ventura area at 7300 feet and had remarkable success with the core drill. We are also using it almost exclusively during the last 300 feet in the deepening of our Signal Hill wells. The process is slightly more expensive than drilling with bits, but the ultimate saving will be many times the difference in the deepening cost.

"I do not mean to say that the core drill has taken the place of rotary bits. Bits are just as useful as they ever were, and can be used just as profitably. But I do mean to say that the core drill has aided bits and rotary tools in general in bringing California production to where it is today."

The efficiency of the core drill has been greatly enhanced by the use of extremely hard metal to face the points. This special metal may not be much harder than steel could be made under certain conditions, but its greatest success lies in the fact that it retains its hardness under all conditions. Various companies making core drills have tested extremely hard steel, but found that it actually melted when subjected to extremely high temperatures. The most recent improvement has been brought about by boring holes in and near the reaming cutters and inserting small sticks of the hard metal. The hole is then seared and welded with ordinary welding rods, leaving the hardened metal sticks in place.

The speed made with core drills depends just as much upon the formation as drilling depends upon it, As coring is done chiefly when a hard formation is encountered, it is necessarily slow. . Core drills are made in lengths up to 20 feet. It is unusual to get 100 per cent cores, although the efficiency often approaches that figure. The general average runs close to 85 per cent, while many cores measure 98 per cent of the total hole made.

As previously noted, the core drill has not superseded the rotary bit nor rendered obsolete any other rotary equipment. It has a distinct field of its own and has proved itself a valuable ally of the operator, who wants to know exactly what he is doing.

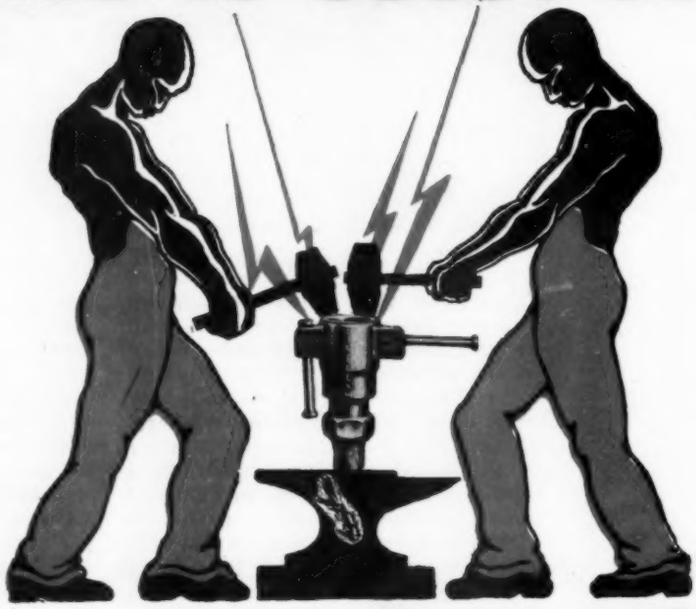
Navy Asking Bids for Natural Gasoline

Washington, D. C.—Proposals for the purchase from the Navy of royalty casing head gasoline produced on Naval Reserve No. 1, in California, will be opened at the office of the Inspector of Naval Petroleum Reserves, Los Angeles, December 15, it has been announced by the Navy Department. The contract will run for a period of six months from January 1, next. No definite amount of gasoline which will be available during the period can be given, but for the five months ended with last September the production averaged approximately 7500 gallons a month. The gasoline offered is from lands leased to the Pan-American Petroleum Company.

Creek County

Tulsa—Mid-Continent Petroleum Corporation's Harjo 1, located in the southwest of the northeast of the northeast of section 18-14-10, Creek County, flowed 30 barrels in one hour and 40 minutes early last week from Dutcher sand found at 28-30-32 feet. The hole was being drilled deeper late in the week in an effort to pick up the Wilcox sand.

Hard Knocks



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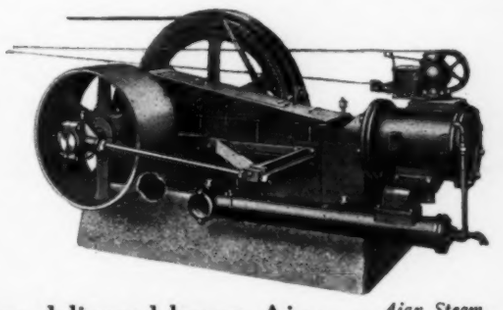

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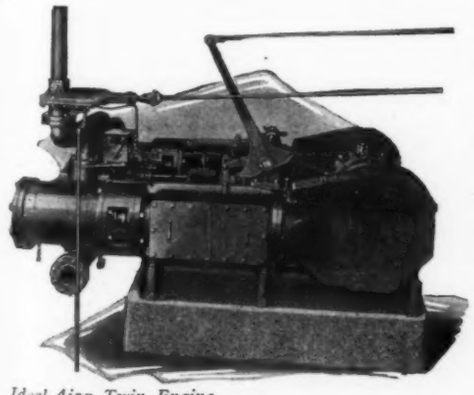

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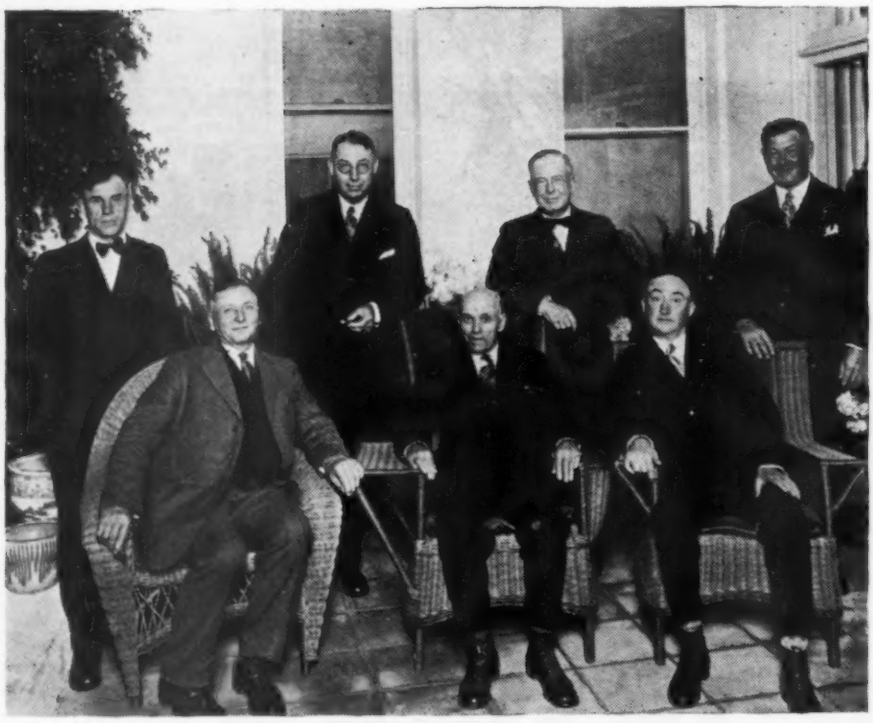
In every oil field

AJAX ENGINES



Back row, G. L. Armstrong, pumper, E. F. Hill, manager of field operations, W. L. Stewart, president, and W. W. Orcutt, vice-president. Front row, Albert Pelle, master of tanker Santa Paula, Carl O. Dahlgren, wharfinger, Oleum refinery, E. J. Brown, transfer agent, Oleum.

Seven Union Oil Company Men Have 202 Years Service With Their Company

SEVEN members of the Union Oil Company of California, includnig its president, W. L. Stewart, with an aggregate of 202 years of service recently were honor guests at a dinner in the home of Mr. Stewart, at Pasadena, to receive service pins commemorating their long year of service.

The honor roll included besides Mr. Stewart, as host, W. W. Orcutt, vice-president; Frank F, Hill, manager of field operations; Carl O. Dahlgren, wharfinger at Oleum Refinery; G. L. Armstrong, pumper at Ventura; Captain Albert Pelle, of the Tanker Santa Paula, and Edward J. Brown of the company's transfer office at Oleum.

Mr. Stewart has been continuously associated with the Union for 33 years, although his first actual connections with the company began in 1889, the year before the Torrey Canyon, Sespe and Hardion and Stewart Oil Companies were consolidated into the Union Oil Company of California.

Frank F. Hill, with 28 years of service is considered one of the most practical oil men on the Pacific Coast today. Starting as a teamster in the Ventura field, he has been associated with the development of and production end of the industry.

Carl O. Dahlgren, wharfinger at Oleum, is a 32-year man. He was a member of the construction crew in the building of that refinery, and upon its completion went to work there.

W. W. Orcutt has to his credit 29 years of service with the company. Under his direction, Union Oil Company was the first on the Coast to organize a geological department for research work and the discovery of new oil fields. The success of this department under Mr. Orcutt's direction in the application of scientific principles to the solving of the problems in the oil fields has probably been one of the freatest factors in inducing California oil men to recognize the value of geological work.

G. L. Armstrong and Captain Albert Pelle each has been affiliated with the Union for 27 years. Mr. Pelle's connections began as a deck hand on the Santa Paula. Mr. Armstrong as a pumper at Ventura, now fills the same position he held when he first started with the company.

Edward J. Brown received his 25-year service pin. He is cashier at Oleum refinery.

In presenting the service pins, Mr. Stewart reviewed briefly the history and growth of the company, and paid tribute to the "old timers" whose services had aided materially in the progress of Union Oil Company.

In addition to the honored guests there were present at the dinner, E. W. Clark, executive vice-president; L. P. St. Clair, vice-president; R. D. Matthews, comptroller; P. N. Boggs, assistant general manager; Chester W. Brown, director of exploration and production; Paul M. Gregg, counsel; John McPeak, secretary, and W. I Stewart, Jr., secretary of the manufacturing committee.

Rio Bravo Field Foremen In Quarterly Conference

Houston.—Field foremen of the Rio Bravo Oil Company met in the Houston office of that company November 17 and 18 for a quarterly conference.

The plan gives each field foreman a chance to discuss with other field foremen and heads of departments the problems and difficulties of his field, as well as the other fields; and has proven a medium through which closer cooperation can be had by all departments. Through the conferences a better check can be made on what material gives the best results, and that material may be standardized for use in all the fields.

On the morning of November 17 a business meeting was held, in which the general problems of the various fields were discussed. Reports were read on material under test and on different kinds of material being used. During the afternoon a lecture was given by Miss Grace Newman of the paleontological department on the advantages of paleontology as applied to the oil business, and members attending the meeting were shown through the laboratory and explanations were made as how determinations were made on cuttings, cores, and samples from drilling wells. Another lecture was given by M. E. Schwarz, production engineer, in which he used the air and gas lift as his topic. The air plant of the Rio Bravo Oil Company at Pierce Junction was the main item of discussion, but statistics from other fields were introduced to show the advantage of this process for flowing wells.

Practically all of the second day of the conference was spent visiting the Hughes Tool Company's plant the Houston Portable Rig Company, and the Foamite Childs Corporation.

Those who attended the conference were: James Hutcheson, vice-president and general manager; R. W. Shaw, assistant to Mr. Hutcheson; C. H. Homer, superintendent; M. E. Schwarz, production engineer; M. C. McDowell, assistant superintendent; S. T. Childress, utility foreman; J. Zaba, material foreman; W. E, Trautwein, chief clerk to the purchasing agent; C. R. Dennis, accountant; J. M. Vetter, land man; R. G. Gray, assistant land man; J. W. Redford, Jr., field foreman at Pierce Junction; W. W. Lewis, field foreman at Electra; R. V. Plyler, field foreman at Saratoga; R. S. Greer, field foreman at Luling; W. T. Radford, field foreman at Jacksonville; and L. E. McKinney, field foreman at Spindle Top.

On the evening of the second day of the conference the men and their wives were guests of Mr. Hutcheson at San Jacinto Inn, where they were joined by H. M. Lull, president of the Rio Bravo Oil Company as well as executive vice-president of the Southern Pacific Lines; O. M. Longnecker, treasurer of both companies; G. S. Waid, vice-president and general manager of the Southern Pacific Lines; and C. B. Garwood of the legal department.

United States Daily Average Production

Figures below are taken from the complete revised estimates of the AMERICAN PETROLEUM INSTITUTE except for the current week, which are advance estimates issued by the A. P. I. and are subject to revision:

1926	Oklahoma	Kansas	Texas (Outside Gulf Coast)	Gulf Coast	North Louisiana	Arkansas	Eastern States	Rocky Mountain	California	United States Daily Ave.	United States Total
January	445,950	99,600	256,500	90,100	43,800	178,000	100,450	101,700	618,750	1,934,850	59,979,900
February	450,300	102,050	246,600	91,550	45,300	169,400	98,950	101,050	604,950	1,910,150	53,483,900
March	457,900	103,000	260,500	91,950	48,800	165,700	97,800	102,100	604,400	1,932,150	59,897,250
April	464,850	102,600	265,600	90,900	51,550	170,750	101,750	107,300	600,650	1,955,950	58,678,000
May	463,350	106,150	280,050	93,700	59,100	175,700	106,100	111,650	602,400	1,998,200	61,944,950
June	459,100	107,900	305,100	91,350	60,350	166,950	106,050	113,300	607,550	2,017,650	60,529,350
July	456,700	110,450	336,300	116,550	57,100	161,650	104,650	107,750	614,400	2,065,550	64,032,300
August	465,300	111,750	383,800	162,800	56,800	157,350	108,600	110,600	608,900	2,165,900	67,143,450
September	466,050	113,400	403,750	175,200	56,850	153,250	110,200	104,700	598,150	2,181,550	65,446,500
October	503,350	114,650	444,700	169,900	58,200	149,500	109,450	98,500	614,200	2,262,450	70,136,500
November	550,700	115,800	477,000	176,900	56,450	143,700	111,150	92,900	643,650	2,368,250	71,047,550
December	564,250	118,800	480,800	181,900	54,800	138,600	110,050	85,650	660,400	2,395,250	74,252,700
1927											
January	598,500	117,200	466,400	173,900	52,900	131,550	107,850	84,450	653,450	2,386,200	73,972,150
February	693,350	116,250	479,800	154,600	52,800	128,200	107,150	85,300	642,700	2,460,150	68,884,300
March	710,350	116,100	475,000	154,750	51,450	124,500	104,400	87,600	640,850	2,465,000	76,414,900
April	723,700	115,400	477,300	155,100	50,500	113,350	108,000	89,350	644,550	2,477,250	74,317,750
May	742,200	114,600	488,700	151,300	47,450	112,700	114,000	89,300	633,550	2,493,800	77,307,700
June	768,600	112,200	480,800	151,650	49,150	112,450	111,850	86,050	638,550	2,511,300	75,338,900
July	846,750	107,750	475,800	142,950	56,200	109,900	111,800	86,950	620,700	2,558,800	79,322,300
August	832,900	105,100	483,450	139,350	56,950	104,750	114,600	80,750	621,450	2,539,300	78,717,850
September	797,450	105,200	493,750	142,900	53,450	101,350	110,800	74,500	637,250	2,516,650	75,498,900
October	782,300	105,100	497,900	138,400	51,300	100,450	113,600	73,250	629,000	2,491,300	77,230,000
November 5	751,350	107,150	497,050	137,700	49,950	99,100	115,000	73,050	623,100	2,453,450	17,174,150
November 12	768,950	107,800	495,600	139,200	50,050	99,150	115,000	73,250	620,500	2,469,500	17,286,500
November 19	768,350	105,900	494,650	138,250	49,500	97,500	115,000	73,700	624,100	2,466,950	17,268,650
November 26	775,000	106,200	515,200	137,800	49,150	96,800	115,250	76,950	626,000	2,498,350	17,488,450
Increase	6,650	300	20,550	.....	.....	.....	250	3,250	1,900	31,400	219,800
Decrease	.....	.....	.....	450	350	700	.....	.....	.....	.....	.....

TEXAS

(Outside Gulf Coast)

PANHANDLE DISTRICT

	Nov. 26	Nov. 19
Hutchinson County	59,500	59,150
Gray County	15,100	14,300
Carson County	8,000	7,600
Wheeler County	1,100	1,450
Others	100	50
Totals	83,800	82,550

NORTH TEXAS

Burkburnett	12,300	12,400
Electra	12,100	12,200
Iowa Park-KMA	2,000	2,000
Wilbarger	11,500	11,300
Archer County	23,850	23,700
Clay County (Petrolia)	600	600
Baylor County	100	100
Montague and Cooke Counties	16,000	16,100
Totals	78,450	78,400

WEST CENTRAL TEXAS

Stephens County	7,900	8,000
Eastland-Desdemona	8,200	8,300
Brown County	19,000	19,050
Coleman County	1,300	1,250
Callahan County	4,000	3,950
Shackelford County	5,350	5,200
Young County	9,600	9,700
Throckmorton County	1,350	1,300
Jack County	800	800
Palo Pinto County	500	500
Others	500	500
Totals	58,500	58,550

WEST TEXAS

Jones County	1,700	1,650
Mitchell-Scurry Cos.	3,400	3,450
Howard County	4,200	4,300
Reagan County	23,600	22,700
Crane-Upton Counties	129,400	123,900
Crockett County	2,950	2,350
Pecos County	42,200	42,150
Winkler County	30,900	17,650
Others	2,550	2,700
Totals	240,900	220,850

EAST CENTRAL TEXAS

Mexia	8,450	8,500
Currie	600	600
Richland	700	700
Wortham	2,450	2,450
Corsicana-Powell	13,500	13,650
Nigger Creek	2,250	2,450
Totals	27,950	28,350

SOUTHWEST TEXAS

Luling	14,500	14,750
Lytton Springs	1,600	1,600
Somerset	350	850
Laredo District	850	7,950
Piedras Pintas	7,900	400
Others	400	400
Totals	25,600	25,950
T'tl Tex. (Outside Gulf Coast)	515,200	494,650

TEXAS GULF COAST

West Columbia	9,000	9,100
Damon Mound	900	900
Boling	2,200	2,250
Big Creek	2,900	3,050
Blue Ridge	5,000	5,500
Pierce Junction	13,400	10,800
Humble	1,900	1,900
Goose Creek	7,700	7,850
South Liberty	2,500	2,500
Hull	14,000	14,950
Spindle Top	47,550	48,600
Sour Lake	3,900	3,950
Batson	1,300	1,300
Saratoga	1,000	1,050
Orange County	4,000	4,400
Barbers Hill	2,600	2,550
Others	2,250	2,000
Totals	122,100	122,650
Texas Total	637,300	617,300

OKLAHOMA

North Braman	3,000	2,800
South Braman	2,200	2,100
Blackwell	3,900	3,900
Hubbard	3,100	3,500
Thomas	2,150	2,200
Tonkawa	16,600	16,600
Garber	9,950	10,000
Burbank	37,850	38,750
Osage (outside Burbank)	30,450	30,500
Watchorn	1,600	1,700
Cushing	21,300	21,300
Bristow Slick	24,900	24,950
Yale Jennings	9,500	9,550
Davenport	2,600	2,700
North Okmulgee	16,200	16,200
Lyons Deaner	6,300	6,300
Stroud	1,250	1,250
Cromwell	11,000	11,150
Papoose	6,100	6,050
Wewoka	10,900	11,400
Seminole	59,600	60,250
Bowlegs	131,150	129,500
Searight	27,050	26,700
Little River	42,000	44,850
Earlsboro	171,400	161,200
Duncan District	6,800	6,800
Graham	6,450	6,450
Fox	1,950	1,950
Healdton	14,700	14,700
Hewitt	9,400	9,400
Scholem Alechem	12,500	12,500
Others	71,150	71,150
Totals	775,000	768,350

CALIFORNIA

Santa Fe Springs	39,000	39,000
Long Beach	106,500	104,000
Huntington Beach	61,000	61,000
Torrance	20,000	20,000
Dominguez	14,000	14,800
Rosecrans	10,000	8,000
Inglewood	32,000	32,000
Midway-Sunset	83,000	83,000
Ventura Avenue	52,500	52,300
Seal Beach	48,000	50,000
Others	160,000	160,000
Totals	626,000	624,100

ARKANSAS

El Dorado	6,050	6,000
Smackover Light	9,500	9,400
Smackover Heavy	73,550	74,000
Stephens	1,200	1,200
Nevada	3,700	3,750
Lisbon	2,700	2,750
Others	100	100
Totals	96,800	97,500

KANSAS

	Nov. 26	Nov. 19
Greenwood County	32,100	32,400
Florence-Covert	1,500	1,500
Peabody-Ebling	3,900	3,900
Eldorado-Towanda	14,250	14,250
Augusta-Fox Bush	4,250	4,200
Rainbow Bend	2,200	2,250
Russell	2,500	2,600
Churchill	13,500	13,000
Others	32,000	31,800
Totals	106,200	105,900

NORTH LOUISIANA

Homer	4,650	4,700
Haynesville	6,950	6,950
Caddo Light	12,400	12,600
Caddo Heavy	4,050	4,400
DeSoto-Red River	4,350	4,050
Elm Grove	700	650
Bellevue	1,050	1,050
Cotton Valley	5,100	5,100
Urania	9,050	9,150
Pleasant Hill	850	850
Totals North Louisiana	49,150	49,500

LOUISIANA GULF COAST

Vinton	4,950	4,700
Lockport	5,800	5,950
Evangeline	1,250	1,300
Edgerly	2,000	2,400
Others	1,700	1,250
Total Louisiana Gulf Coast	15,700	15,600
Louisiana Total	64,850	65,100

MOUNTAIN STATES

WYOMING

Salt Creek	38,500	34,600
Grass Creek	2,650	2,650
Elk Basin	950	1,000
Big Muddy	2,800	2,750
Lost Soldier	2,800	2,600
Rock River	2,750	2,650
Lance Creek	1,050	1,300
Others	3,550	3,750
Totals	55,050	51,300

MONTANA

Cat Creek	1,900	1,950
Sunburst	11,000	11,500
Others	150	250
Totals	13,050	13,700

COLORADO

Moffats (Craig)	1,150	1,450
Fort Collins	3,150	2,950
Florence	800	800
Others	1,350	1,300
Totals	6,450	6,500

NEW MEXICO

Artesia	1,250	1,250
Hogback	700	700
Rattlesnake	350	150
Others	100	100
Totals	2,400	2,200
Totals Mountain States	76,950	73,700

EASTERN STATES

(Including Ill., Ind., Ohio, W. Va., Pa., Ky., and N. Y.)	115,250	115,000

PRODUCTION SUMMARY

East of Rockies	1,795,400	1,771,700
United States	2,498,350	2,466,950

CRUDE OIL PRICE QUOTATIONS

CURRENT POSTINGS

EASTERN STATES

	Nov. 30 1927
New York Transit	2.65
Bradford District	2.65
National Transit	2.55
Southwest	2.55
Eureka	2.50
Buckeye	2.25
Macksburg	2.80
Gaines	2.60
Somerset	1.50
Cabell	1.40
Ragland	.95
Corning, 35-cent grade	1.45
Corning, 25-cent grade	1.35
Keister	1.10

CENTRAL STATES

Illinois	1.60
Indiana	1.48
Lima	1.71
Plymouth	1.33
Princeton	1.60
Waterloo	1.18
Wooster	1.57

WESTERN KENTUCKY

Posted by Stoll Refining Company for crude from Allen, Warren, Franklin, Davies, Barren,

All grades	1.50

MID-CONTINENT

Prairie, Sinclair, Gulf, Texas and Magnolia*

	Nov. 30 1927
28 to 28.9 gravity	1.12
29 to 29.9 gravity	1.14
30 to 30.9 gravity	1.16
31 to 31.9 gravity	1.18
32 to 32.9 gravity	1.20
33 to 33.9 gravity	1.22
34 to 34.9 gravity	1.24
35 to 35.9 gravity	1.26
36 to 36.9 gravity	1.28
37 to 37.9 gravity	1.30
38 to 38.9 gravity	1.32
39 to 39.9 gravity	1.34
40 to 40.9 gravity	1.36
41 to 41.9 gravity	1.38
42 to 42.9 gravity	1.40
43 to 43.9 gravity	1.42
44 to 44.9 gravity	1.44
45 to 45.9 gravity	1.46
46 to 46.9 gravity	1.48
47 to 47.9 gravity	1.50
48 to 48.9 gravity	1.52
49 to 49.9 gravity	1.54
50 to 50.9 gravity	1.56
51 to 51.9 gravity	1.58
52 and above	1.60

*Magnolia's price for below 30 gravity is $1.05. Magnolia's price on Glasscock County crude is 80 cents per barrel, flat, and is also 80 cents on all crude in Howard County that comes from section 136, block 29 W & NW Railway Survey.

NORTH AND CENTRAL TEXAS

Ranger, North Texas, Mexia, Powell, Richland, Wortham, Currie, Moran, Nocona and Lytton Springs crude.

Humble O. & R. Co. and Texas Co.*

	Nov. 30 1927
Below 25 gravity	.90
25 to 25.9 gravity	1.06
26 to 26.9 gravity	1.08
27 to 27.9 gravity	1.10
28 to 28.9 gravity	1.12
29 to 29.9 gravity	1.14
30 to 30.9 gravity	1.16
31 to 31.9 gravity	1.18
32 to 32.0 gravity	1.20
33 to 33.9 gravity	1.22
34 to 34.9 gravity	1.24
35 to 35.9 gravity	1.26
36 to 36.9 gravity	1.28
37 to 37.9 gravity	1.30
38 to 38.9 gravity	1.32
39 to 39.9 gravity	1.34
40 to 40.9 gravity	1.36
41 to 41.9 gravity	1.38
42 to 42.9 gravity	1.40
43 to 43.9 gravity	1.42
44 to 44.9 gravity	1.44
45 to 45.9 gravity	1.46
46 to 46.9 gravity	1.48
47 to 47.9 gravity	1.50
48 to 48.9 gravity	1.52
49 to 49.9 gravity	1.54
50 to 50.9 gravity	1.56
51 to 51.9 gravity	1.58
52 and above	1.60

Corsicana Heavy, 1.00 per barrel, posted by Magnolia.

*The Texas Company's Postings begin at 28 to 28.9.

SOUTH TEXAS

Mirando	1.00

SOMERSET

Grayburg

	Nov. 30 1927
Below 33 gravity	$1.05
33 to 33.9 gravity	1.07
34 to 34.9 gravity	1.09
35 to 35.9 gravity	1.11
36 to 36.9 gravity	1.13
37 to 37.9 gravity	1.15
38 and above	1.17

GULF COAST

Grade "A" all companies	1.20
Gulf Coast Light Oil, Below 2	1.15
25 to 25.9 gravity	1.17
26 to 26.9 gravity	1.19
27 to 27.9 gravity	1.21
28 to 28.9 gravity	1.23
29 to 29.9 gravity	1.25
30 to 30.9 gravity	1.27
31 to 31.9 gravity	1.29
32 to 32.9 gravity	1.31
33 to 33.9 gravity	1.33
34 to 34.9 gravity	1.35
35 to 35.9 gravity	1.37
36 to 36.9 gravity	1.39
37 to 37.9 gravity	1.41
38 to 38.9 gravity	1.43
39 to 39.9 gravity	1.45
40 and above	1.47

*Humble Oil & Refining Company's postings on Gulf Coast Light stop at 35 to 35.9. Its price on all crudes above 35 is $1.37 per barrel.

Magnolia Petroleum Company's postings stop at 31 to 31.9.

(Continued on page 328)

CALIFORNIA CRUDE OIL PRICES AT THE WELL

Following are the current prices offered by Standard Oil Company for crude oil at the well: (Price per barrel of 42 galolns in fields indicated)

Gravity (degrees)	Signal Hill	Seal Beach	Huntington Beach	Inglewood	Olinda-Brea Canon	Athens-Rosecrans Dominguez	Torrance	Richfield	Whittier La Habra	Montebello	Coyotte Hill	Santa Fe Springs	Newhall McKittrick Kern River	Midway Sunset Elk Hills	Buena Vista Hills	Lost Hills	Coalinga	Wheeler
14-14-9	$ .85	$ .85	$ .85	$ .85	$ .85	$ ..	$ .85	$ .85	$ .85	$ .85	$ .85	$ ..	$ .75	$ .75	$ .75	$ .75	$ .75	$ .75
15-15-9	.85	.85	.85	.85	.85	..	.85	.85	.85	.85	.85	..	.75	.75	.75	.75	.75	.75
16-16-9	.85	.85	.85	.85	.85	..	.85	.85	.85	.85	.85	..	.75	.75	.75	.75	.75	.75
17-17-9	.85	.85	.85	.85	.85	..	.85	.85	.85	.85	.85	..	.75	.75	.75	.75	.75	.75
18-18-9	.85	.85	.85	.85	.85	..	.85	.85	.85	.85	.85	..	.75	.75	.75	.75	.75	.75
19-19-9	.85	.85	.85	.85	.85	..	.85	.85	.85	.85	.85	..	.75	.75	.75	.75	.75	.75
20-20-9	.85	.85	.85	.85	.85	..	.85	.85	.85	.85	.85	..	..	.77	.77	.77	.76	.76
21-21-9	.86	.86	.86	.86	.86	..	.86	.86	.85	.85	.86	.85	..	.79	.79	.79	.77	.77
22-22-9	.87	.87	.87	.87	.87	..	.87	.87	.85	.85	.87	.85	..	.81	.81	.81	.78	.78
23-23-9	.88	.88	.88	.88	.88	..	.88	.88	..	.85	.88	.85	..	.83	.83	.83	.79	.79
24-24-9	.89	.89	.89	.89	.89	..	.89	.89	..	.85	.89	.85	..	.85	.85	.85	.80	.80
25-25-9	.90	.90	.90	.90	.90	.90	.90	.90	..	.86	.90	.86	..	.87	.87	.87	.81	.81
26-26-9	.92	.92	.92	.92	.92	.92	.92	.92	..	.87	.91	.87	..	.89	.89	.89	.83	.82
27-27-9	.94	.94	.94	.94	.94	.94	.94	.94	..	.88	.92	.88	..	.91	.91	.91	.85	.83
28-28-9	.96	.96	.96	.96	.96	.96	.96	.96	..	.89	.93	.89	..	.93	.93	.93	.87	..
29-29-9	.98	.98	.98	..	.98	.98	..	.98	..	.90	.94	.91	..	.96	.96	.96	.89	..
30-30-9	1.00	1.00	1.00	..	1.00	1.00	..	1.00	..	.91	.95	.93	..	.99	.99	.99	.91	..
31-31-9	1.03	1.03	1.03	..	..	1.03	..	..	..	..	..	.95	..	1.02	1.02	1.02	.93	..
32-32-9	1.06	1.06	1.06	..	..	1.06	..	..	..	..	..	.97	..	1.05	1.05	1.05	.95	..
33-33-9	..	..	..	..	..	1.09	..	..	..	..	..	.99	..	1.08	1.08	1.08	.97	..
34-34-9	..	..	..	..	..	1.12	..	..	..	..	..	1.01	..	..	..	1.11	.99	..
35-35-9	..	..	..	..	..	1.15	..	..	..	..	..	1.03	..	..	..	..	1.01	..
36-36-9	..	..	..	..	..	1.18	..	..	..	..	..	1.06	..	..	..	..	..	..
37-37-9	..	..	..	..	..	1.21	..	..	..	..	..	1.09	..	..	..	..	..	..
38-38-9	..	..	..	..	..	1.24	..	..	..	..	..	1.12	..	..	..	..	..	..
39-39-9	..	..	..	..	..	1.27	..	..	..	..	..	1.15	..	..	..	..	..	..
40-40-9	..	..	..	..	..	1.30	..	..	..	..	..	..	..	..	..	.	..	..
41-41-9	..	..	..	..	..	1.33	..	..	..	..	..	.	..	..	..	.	.	..
42-42-9	..	..	..	.	..	1.36	..	..	..	..	..	.	..	..	..	.	..	..

This SIGN will increase your gallonage

IT'S not only what this sign says that counts so much—*but what it means!*

As soon as you display this sign of the "Authorized Opaline Dealer", you sell motor oil by the commonsense method which gives motorists *correct lubrication* and maintains your PRESTIGE in SERVICE.

The Sinclair method of recommending the right grade of Opaline is a simple one—an exclusive one—and *it is correct!* It is based on the Sinclair Law of Lubrication. It provides Opaline in several grades to fit the degree of wear in a motorist's engine as indicated by the *mileage on the speedometer.*

Opaline and this method are worth knowing about—and thinking about. May we tell you about this successful method of selling *correct lubrication* with the full line of Opaline Motor Oils?

SINCLAIR REFINING COMPANY, INC.

Also Makers of Sinclair Gasoline and H-C Gasoline

45 NASSAU STREET, NEW YORK

Atlanta Boston Chicago Houston Kansas City

Entire contents copyrighted 1927 by Sinclair Refining Company, Inc.

MARKHAM

	Nov. 30 1927
The Texas Company	
All grades	1.00

LULING

All grades	1.00

PANHANDLE

(Humble Oil & Refining Company and Magnolia Petroleum Company, Gulf Pipe Line Company, and Kay County Gas Company)*

Hutchinson, Carson and Wheeler counties, all grades	.75

*Gulf and Kay County do not post in Wheeler County.

Gray County

(Humble Oil & Refining Company)

28 to 28.9 gravity	.80
29 to 29.9 gravity	.82
30 to 30.9 gravity	.84
31 to 31.9 gravity	.86
32 to 32.9 gravity	.88
33 to 33.9 gravity	.90
34 to 34.9 gravity	.92
35 to 35.9 gravity	.94
36 to 36.9 gravity	.96
37 to 37.9 gravity	.98
38 to 38.9 gravity	1.00
39 to 39.9 gravity	1.02
40 to 40.9 gravity	1.04
41 to 41.9 gravity	1.06
42 to 42.9 gravity	1.08
43 to 43.9 gravity	1.10
44 and above	1.12

(Humble Oil & Refining Company)

Crane, Upton, Crockett and Pecos counties, all grades	.60

WEST TEXAS

(Humble, Gulf, Magnolia, Kay County Gas Company and Southern Crude Oil Purchasing Company.)*

Crane, Crockett, Pecos, Upton and Winkler Counties	.60

*Kay County Gas Company does not buy in Winkler and Pecos Counties, and Southern does not buy in Pecos or Crockett.

Col-Tex Refining Company

Mitchell County	$ .93

WYOMING-MONTANA

Wyoming

Byron	1.33
Ferris	1.60
Elk Basin	133
Grass Creek	1.33
Rock Creek	1.25
Lost Soldier	.95
Lance Creek	1.33
Mule Creek	1.10
Notches	.65
Big Muddy	1.25
Osage	1.33
Hamilton Dome	.85
Pilot Butte	1.75
Torchlight-Greybull	1.33
Lander	.80
Simpson Ridge	.80
Rex Lake	1.10
South Casper Creek-Poison Spider	1.00

Salt Creek

Midwest Refining Company

29 to 29.9 gravity	1.14
30 to 30.9 gravity	1.16
31 to 31.9 gravity	1.18
32 to 32.9 gravity	1.20
33 to 33.9 gravity	1.22
34 to 34.9 gravity	1.24
35 to 35.9 gravity	1.26
36 to 36.9 gravity	1.28
37 and above	1.30

MONTANA

Sunburst	1.35
Cat Creek	1.33
Lake Basin	2.20

NEW MEXICO

Artesia	1.00
Hogback	1.38

CANADIAN CRUDE

	Nov. 30 1927
Oil Springs	2.18
Petrolia	2.11

*Bounty on Canadian crude is ¾ cent per gallon, or 26¼ cents per barrel.

LOUISIANA-ARKANSAS

(Standard of Louisiana, Louisiana Oil Refining Company, Gulf Refining Company of Louisiana and The Texas Co.) Homer, Haynesville, Caddo, El Dorado, De Soto and Chrichton.

Below 28 gravity	1.10
28 to 28.9 gravity	1.12
29 to 29.9 gravity	1.14
30 to 30.9 gravity	1.16
31 to 31.9 gravity	1.18
32 to 32.9 gravity	1.20
33 to 33.9 gravity	1.22
34 to 34.9 gravity	1.24
35 to 35.9 gravity	1.26
36 to 36.9 gravity	1.28
37 to 37.9 gravity	1.30
38 to 38.9 gravity	1.32
39 to 39.9 gravity	1.34
40 to 40.9 gravity	1.36
41 to 41.9 gravity	1.38
42 to 42.9 gravity	1.40
43 to 43.9 gravity	1.42
44 to 44.9 gravity	1.44
45 to 45.9 gravity	1.46
46 to 46.9 gravity	1.48
47 to 47.9 gravity	1.50
48 to 48.9 gravity	1.52
49 to 49.9 gravity	1.54
50 to 50.9 gravity	1.56
51 to 51.9 gravity	1.58
52 and above	1.60

Atlantic Oil Producing Company posts this same schedule on Homer, Haynesville, and West El Dorado.

Magnolia Petroleum Company has the same posting on Pine Island, Haynesville, Eldorado and Bull Bayou.

STEPHENS

(All Companies)

	Nov. 30 1927
Below 28	1.00
28 to 28.9 gravity	1.04
29 to 29.9 gravity	1.04
30 to 30.9 gravity	1.06
31 to 31.9 gravity	1.08
32 and above	1.10

SMACKOVER

(All Companies)

Below 24 gravity	$ .85
24 and above	1.00

Below 24 gravity	$ .90
24 and above	1.15
Bellevue	1.25
Jennings	1.15
Vinton	1.30
Edgerly	1.30
Starks Dome	1.30
Urania	.75
Cotton Valley	1.00
Calion	.85

IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

American Petroleum Institute Figures. Barrels of 42 gallons)

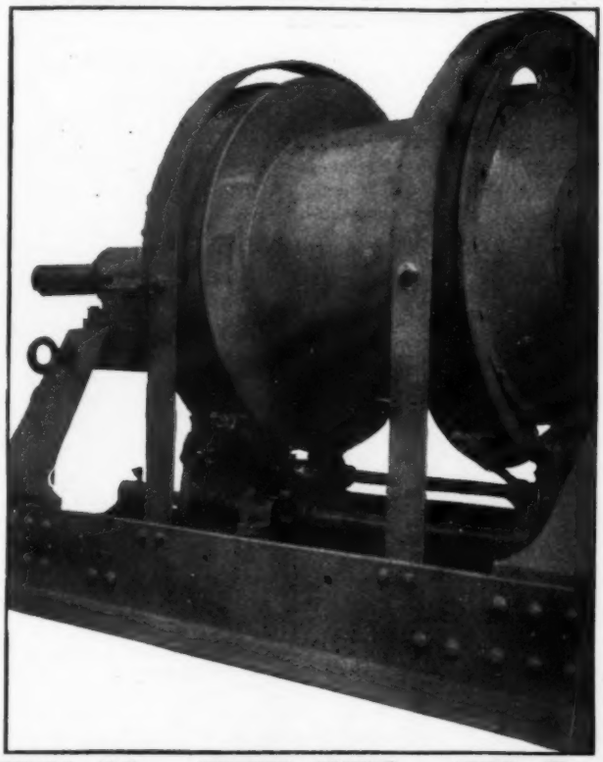
	Week Ended Nov. 19	Week Ended Nov. 12
AT ATLANTIC COAST PORTS—		
Baltimore	297,000	307,000
Boston	98,000	.....
New York	355,000	670,000
Philadelphia	251,000	129,000
Others	225,000	133,000
Total	1,226,000	1,239,000
Daily average	175,143	177,000
AT GULF COAST PORTS—		
Galveston District	80,000	40,000
New Orleans and Baton Rouge	222,000	174,000
Port Arthur and Sabine District	.....	.....
Tampa	.....	50,000
Total	302,000	264,000
Daily average	43,143	37,714
AT ALL UNITED STATES PORTS—		
Total	1,528,000	1,503,000
Daily average	218,286	214,714
Daily average four weeks ended	220,607	206,357

RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF COAST PORTS

American Petroleum Institute Figures. Barrels of 42 gallons)

	Week Ended Nov. 19	Week Ended Nov. 12
AT ATLANTIC COAST PORTS—		
Baltimore	.....	283,000
Boston	.....	85,000
New York	251,000	.....
Philadelphia	.....	302,000
Others	.....	.....
Total	251,000	670,000
Daily average	35,857	95,714
AT GULF COAST PORTS—		
Daily average	.....	.....
TOTAL ATLANTIC & GULF COAST PORTS—		
Daily average	35,857	95,714
Daily average four weeks ended	87,285	99,357
Total	251,000	670,000
DISTRIBUTION OF TOTAL CALIFORNIA RECEIPTS IS AS FOLLOWS:		
Crude	95,000	273,000
Gasoline	78,000	327,000
Gas oil	78,000	.....
Fuel oil	.....	70,000
Total	251,000	670,000

POWERFUL — SMOOTH — SENSITIVE



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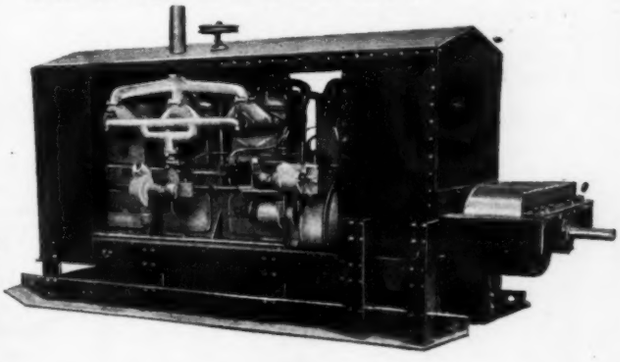
In the new Climax Reverse Clutch, a dry disc type clutch is used on the go-ahead end. It is easily, quickly and accurately adjusted by only one nut. Large friction surfaces, high grade asbestos fabric friction material and properly designed control make it possible to pick up the tool slowly or quickly with the minimum effort on the part of the operator. It is sensitive. The driller can "feel" his load —very essential in fishing jobs and other touchy situations. A special feature provides circulation of air to cool the clutch at times of excessive use, as when running pipe. Write Climax Engineering Co., 75 W. 18th Ave., Clinton, Iowa, for the host of other high-speed drilling features.

The constant flow of power developed by this 120 h. p. Climax Paymaster, 6 cylinder engine, is transmitted through the new Climax Reverse Clutch to the band wheel. The Paymaster engine gives a very steady and quick accelerating or decelerating flow of power, either forward or reverse direction, through the clutch to the band wheel.



CLIMAX *Trade Mark Reg. U. S. Pat. Off.*

Reliable Cable Drilling Units

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NSCO

Say you saw it in The OIL WEEKLY

West Texas Production

CRANE COUNTY

	Producing Wells	Daily Average Prod.
Church & Fields—		
Simms Oil Co. & Atlantic Oil Prod. Co.	27	26,400
Landreth Production Corporation	16	12,815
Tidal Oil Co. & Thurman-Maxwell	22	10,815
Eastland Oil Co. & Collett-O'Keefe	8	8,795
Prairie Oil & Gas Company	10	*6,355
Humble Oil & Refining Company	12	6,190
Magnolia Petroleum Company	29	5,940
Pecos Oil Company	11	4,115
Gulf Production Company	10	1,790
Church-Fields & Bert Weekly	3	1,605
Independent Oil & Gas Company	3	*415
Geo. Church & Bob Fields	2	260
The Texas Company	2	255
Stidham & Thrasher	1	10
Totals	156	85,760
Gulf-McElroy—		
Gulf Production Company	54	20,305
Gulf-Waddell—		
Gulf Production Company	1	30
Marland-Hughes—		
Marland Oil Company	16	565
The Texas Company	10	220
McMan Oil & Gas Company	2	70
Independent Oil & Gas Company	1	10
Totals	29	865
Totals for Crane County	240	106,960

UPTON COUNTY

Texas Pacific Coal & Oil Co.	16	2,590
Marland Oil Company	78	2,225
Roxana Petroleum Corporation	39	2,170
Dixie Oil Company	36	2,075
Gulf Production Company	15	1,920
Prairie Oil & Gas Company	8	1,375
The Texas Company	19	1,125
Humble Oil & Refining Company	10	875
Champlin Refining Co.	3	820
Independent Oil & Gas Company	26	650
R. H. Paxton et al	1	470
Amerada Petroleum Corporation	6	325
Snowden & McSweeney	1	210
Sun Oil Company	10	200
Republic Prod. Co. & Marland Oil Co.	5	115
Wentz Oil Corporation	3	100
Tidal Oil Company	3	95
Pure Oil Company	1	60
Simms Oil Company	3	45
Bryant & Atlantic Oil Prod. Co.	2	40
Atlantic Oil Producing Co.	1	35
McMan Oil & Gas Company	2	25
Texon Oil & Land Company	1	15
White Eagle Oil & Refining Co.	1	15
Totals	290	17,575

REGAN COUNTY

Big Lake Oil Company	122	16,935
Texon Oil & Land Company	79	5,390
Totals	201	22,325

PECOS COUNTY

Mid-Kansas & Transcontinental	20	*20,850
The California Company	7	*9,345
McMan O. & G. Co. & Marland Oil Co.	9	*4,965
Simms Oil Company	2	*3,935
Gulf Production Company	2	1,230
Gulf Production Co. (Crockett County)	2	*320
Roxana Petroleum Corporation	3	*1,195
Crude Oil Co. (was Allsman-Bell)	3	*470
Humble Oil & Refining Company	3	*465
Marland Oil Company	4	*340
Mazda Oil Corp. & Savoy Oil Company	1	*175
Red Bank Oil Company	1	*130
Totals	57	43,420

WINKLER COUNTY

	Producing Wells	Daily Average Prod.
Cranfill-Reynolds et al	2	6,475
Southern Crude & R. A. Westbrook et al	2	5,935
Roxana Petroleum Corporation	1	*3,500
Southern Crude & Dixie Oil Company	6	*3,355
Independent Oil & Gas Company	2	*3,075
Gulf Production Company	3	*2,415
Landreth Prod. Corp. & Roxana Pet.	2	*2,050
Atlantic Oil Producing Company	1	*1,260
Murchison Oil Co. & Cranfill Bros.	4	695
Texon Oil & Land Company	1	600
Humble Oil & Refining Co.	1	*550
Pure Oil Company	1	*485
Joe Maxwell & Luther Turman	1	*70
Llano Oil Co. & Roxana Pet. Corp.	1	*20
Totals	28	30,485

HOWARD COUNTY

Magnolia Petroleum Company	40	*2,055
Marland Oil Company	32	1,085
Pure Oil Company	4	310
Sweeney & Henry et al	1	145
Lockhart & Company	7	140
Bristow & Merrick	3	105
Marland & Texon Oil & Land Company	2	105
Godley Oil & Gas Company	1	80
Frank M. Greene Corp.	2	80
F-H-E Oil Company	1	75
L. C. Harrison et al	2	50
Mid-West Exploration Company	2	50
Tidal Oil Company	2	50
Humble Oil & Refining Company	2	35
Owen-Sloan Oil Company	1	35
Comet Petroleum Company	2	25
Gulf Production Company	2	10
Totals	106	4,435

MITCHELL COUNTY

The California Company	96	2,480
Magnolia Petroleum Company	22	500
Atlantic Oil Producing Company	8	225
Eastland Oil Company et al	9	180
Tidal Oil Company	2	30
Fred Carey et al	1	15
Total s.	138	3,430

JONES COUNTY

Phillips Petroleum Company	10	840
Marland Oil Company	3	330
Mid-West Exploration Company	4	155
Stebbins Oil & Gasoline Co.	1	15
Atlantic Oil Producing Co. et al	1	5
Totals	19	1,345

CROCKETT COUNTY

Humble O. & R. Co. & Marland Oil Co.	13	775
Cushing Ref. & Gasoline Co.	2	295
Taylor-Link Oil Co. & Kirby Pet. Co.	1	355
E. L. Smith Oil Co. (was J. K. Hughes)	5	215
Pecos Oil Company (was Cromwell et al)	3	130
Republic Production Company	2	125
Gulf Production Company	7	110
Roxana Petroleum Corp.	1	15
Totals	34	2,020

RUNNELS COUNTY

Vacuum Oil Co. & Hill-Ladd	1	95

LOVING COUNTY

Lockhart & Company	2	75

SCURRY COUNTY

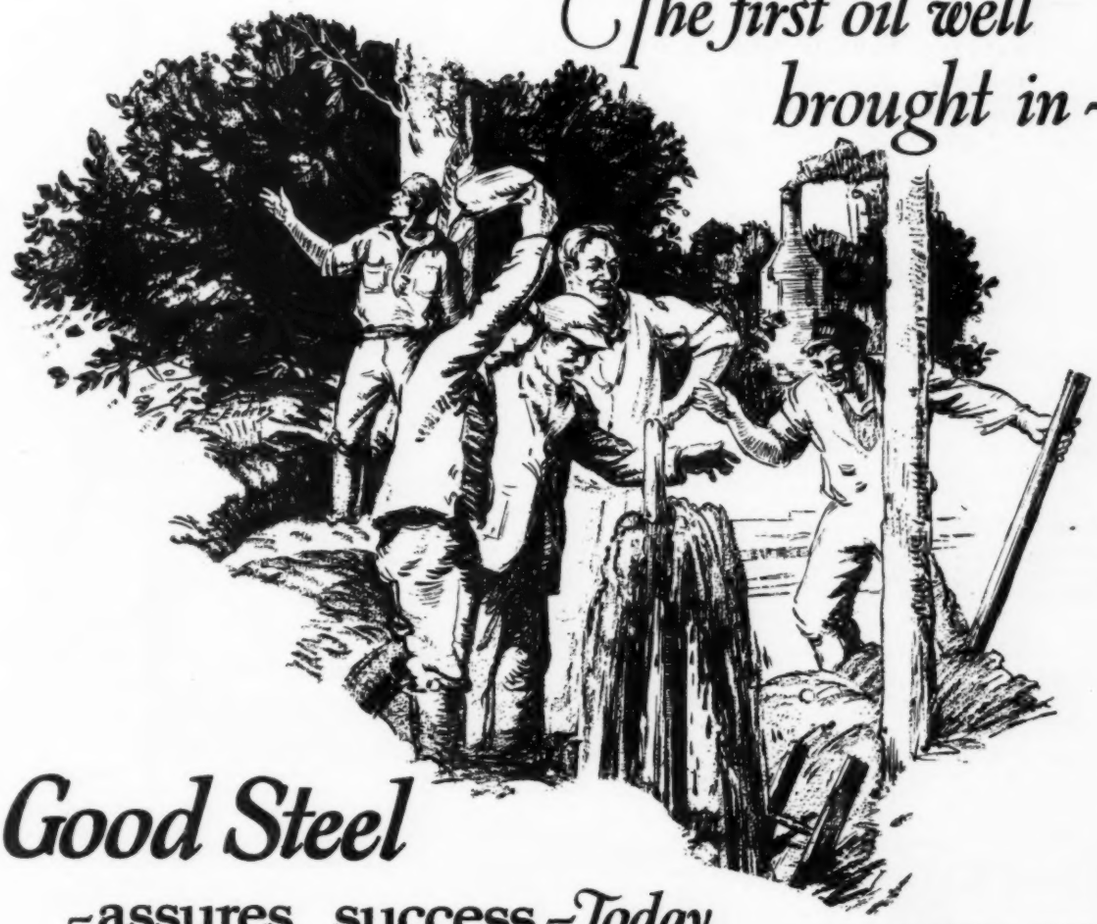
The Northwest Company	5	45

ECTOR COUNTY

J. S. Cosden & The Texas Company	1	15
Totals for all fields	1,122	232,215
Totals for previous week	1,091	218,130

*Production partially pinched.

The first oil well brought in—



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—assures success—*Today*

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And they never will be what they used to be.
The old order changeth.
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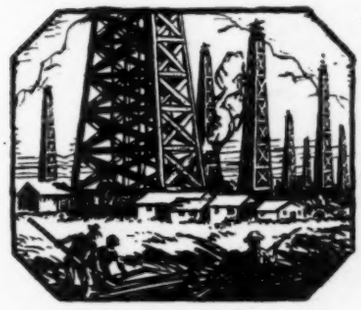
Just making a good steel wasn't enough. Asco Steel is produced to furnish a BETTER STEEL for making oil well tools and we can prove this statement by the verdict of some of the leading drillers.
The problems of the man drilling for oil have been ours, and together we have been able to produce a steel that will REDUCE DRILLING and Fishing Costs. Write for further information.



"A Story of Steel and Oil" is a historical sketch of the petroleum industry. Write for your copy today.

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NEWPORT ◆ KENTUCKY

COMPLETIONS FOR PAST WEEK IN U.S. FIELDS

SUMMARIZED REVIEW OF FIELD RESULTS

State—	Completions This Week	Completions Last Week	Producers This Week	Producers Last Week	Gas Wells This Week	Gas Wells Last Week	Failures This Week	Failures Last Week	Initial Production This Week	Initial Production Last Week
Arkansas	6	10	2	4	2	..	2	6	50	253
California	16	14	13	10	..	..	3	4	14,195	7,295
Illinois	2	2	2	1	..	..	..	1	33	15
Indiana	15	1	6	1	4	..	5	..	77	2
Kansas	42	10	16	4	3	..	23	6	5,440	1,055
Kentucky	13	17	8	9	..	1	5	7	220	890
Louisiana	10	14	2	7	5	1	3	6	620	1,032
Michigan	..	2	..	2	..	..	..	..	....	60
Montana	..	3	..	2	..	1	..	..	....	9,800
New York	20	19	19	16	..	2	1	1	48	73
Ohio	19	18	5	11	10	3	4	4	42	276
Oklahoma	81	96	43	59	10	7	28	30	19,004	29,333
Pennsylvania	69	58	60	52	7	4	2	2	153	254
Texas	120	103	57	50	12	9	51	44	76,347	44,067
West Virginia	19	5	4	3	11	1	4	1	83	38
Wyoming	..	3	..	2	..	1	..	..	....	125
Totals	432	375	237	233	64	30	131	112	116,312	94,568
Increase this week	57	..	4	..	34	..	19	..	21,744	....
Decrease this week	..	..	..	..	..	..	..	..	....	....

NOTE—Following is the explanation of abbreviations, signs, etc., used in completion and wildcat reports: *—dry hole, abandoned well; ‡—salt water; †—junked and abandoned; ¶—million cubic feet of gas; abn—abandoned; bbls—barrels; b. a.—basic sediment; cas—casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in—inches; loc—location; m—milling; n, s, e, w—north, south, east, west; r—reaming; sd—shut down; sdtr—sidetracking; sp—spudding; sr—straight reaming; std—standardizing; sw—salt water; td—total depth; ur—underreaming; wo—workover; woc—waiting on standard rig.

TEXAS

GULF COAST

Company, Well and Location	Initial Production Bbls.	Depth
SPINDLE TOP—		
Gulf, Marrs McLean A-16	458	4650
Magnolia, Gladys Fee A-2	*	5800
Yount-Lee Oil Co., Gladys 47	4000	2700
McFadden 11	1000	4850
McFadden 37	¶	....
NASH DOME—		
Rycade, Wisdom 16	¶30-200	....
BATSON—		
The Texas Co., Sterling 1	*	4280
GOOSE CREEK—		
Southern Explo. Co., Freeman 6	*	3390
HULL—		
Gulf, Phoenix Dev. Co. 29	*	3800
PIERCE JUNCTION—		
Gulf, E. R. Taylor et al 21	450	4550
Smith et al, Humble Co. Fee 1	*	4300
ORANGE—		
Rex Pet. Co., Carbello 6	*	3550

WEST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
CRANE COUNTY—		
Independent O. & G. Co., University 4-A, shot	850	2912
Magnolia, O'Keefe-Univ. 12, shot	550	2857
Simms & Atlantic, University 8-D	†	2515
Tidal Oil Co. & Turman-Maxwell, University 4-I	800	2900
University 6-I	100	2928
University 7-I	400	2905
JONES COUNTY—		
Phillips Pet. Co., Mason 2	65	2629
PECOS COUNTY—		
Crude Oil Co., Pecos River Bed 4	425	1040
McMan O. & G. Co. & Marland Oil Co., Yates 8	2800	1504
Yates 9	2600	1500
Yates 10	3380	1510
Mid-Kansas & Transcontinental, Yates 9-B	14,500	1980
Yates 5-C	5000	1130
Roxana, Tippett 2	4000	1517
UPTON COUNTY—		
Champlin Ref. Co., Lane 3	400	2040
The Texas Co., Perry 4	1500	1995
WINKLER COUNTY—		
Humble, Grisham-Hunter 4	2500	2890
Independent O. & G. Co., Grisham-Hunter 1	7500	2879
Roxana, Hendricks 1-C	10,000	2285
Southern Crude & Dixie Oil Co., Hendricks 1-F-T-67	2700	3031
Hendricks 3-C-T-67	2400	3030

CENTRAL WEST TEXTS

Company, Well and Location	Initial Production Bbls.	Depth
BROWN COUNTY—		
Amerada, Galbreath 3	465	1339
Bush-Spinney et al, Richardson 1	25	1438
Humble, Galbreath 8	240	1324
Galbreath 10	80	1314
Mace et al, Nation 1	*	360
Peck et al, Mills 1	*	1825
Phillips Pet. Co., Newsome 8	150	1330
Pitts et al, McGhee 1	*	1049
Selby O. & G. Co., Ellis 20	100	1363
E. L. Smith Oil Co., Smith 17	50	1370
Gilbreath 3-A	250	1353
Van Bibber & Lehman, Evans 3	*	705
Veale et al, Newton 1	*	1290
Wheelock & Collins, Smith 3	160	1344
CALLAHAN COUNTY—		
Prairie O. & G. Co., Webb 2	25	1651
Webb 3	40	1644
COLEMAN COUNTY—		
Jameson & Murray, Havens 1	*	1092
Lee & Daniels, Henderson 1	*	1615
Senior Pet. Co., Pfluger 1	*	1495
COMANCHE COUNTY—		
Moore et al, Strickland 1	¶3½	2825
EASTLAND COUNTY—		
Adamson & Bearman, Roseuquest 3	100	1476
Atwood et al, Gullett 1	*	1703
John W. Hooser et al, Fox 5	100	1621
Hoffman et al, Poe 1	*	1590
McGee et al, Languist 1	*	1346
PALO PINTO COUNTY—		
Cranfill-Reynolds, Gilbert 1	¶3	3840
D. A. Upham Gas Co., Wharton 1	¶3½	4040
SHACKELFORD COUNTY—		
Simmons et al, Ackers 1	*	2253

NORTH TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
ARCHER COUNTY—		
G. J. Brown et al, Perkins 2	*	1797
L. T. Burns and The Texas Co., Burns 1	15	1520
Harris et al, Farmer 1	*	1539
Hines and The Texas Co., Farmer 1	*	1601
McChesney et al, Beardon 5	*	1090
Pandem Oil Corp., Hudson 10	15	1413
Panhandle Ref. Co., Colgan 1	*	1495
Shaw et al, Wilson 1	*	1600
The Texas Co., Jentsch 3	*	1556
BURKBURNETT—		
Ascot Oil Co., J. E. Roller 35	*	1318
CLAY COUNTY—		
Carter-Fines et al, Henderson 1	*	910
COOKE COUNTY—		
Miller Drilling Co. et al, Koelzer 3	10	1397
Oil Operators Trust, Luke 7	15	1675
ELECTRA—		
Wayne Hammon et al, McCarty 1-C	15	242
JACK COUNTY—		
Christie Bros. et al, Jones 2	140	2074
Dale Oil Corp., Hanna 2	*	550
W. H. Henderson et al, Jackson 1	*	705
Kessler & Logan, Clerihew 1	*	1000
O'Neal & White, Street 2	*	538
Thedford Bros. et al, Richard-Lanier 4	5	520
K-M-A AND IOWA PARK—		
C. C. Bradford et al, M. Reis 1	*	2050
W. H. Hammon et al, Mitchell 2	15	857
MONTAGUE COUNTY—		
Arco Oil Co., Loy 2	20	823
Baker & McClure, Hodge 1	*	1109
Burns & Farris et al, Field 1	*	1453
Bridwell-Heydrick, Salmon 3-A	*	1902
Christie Bros., Heaton 1	4	793
Continental Oil Co., Hinton 3	25	802
Humble, Hinton 2	60	789
Little R. W. O. Co., Roper 1	*	2002
The Texas Co., Salmon-Henley 1	25	1186
SOUTH VERNON DISTRICT—		
Humble, Castleberry 1-A	*	2583
YOUNG COUNTY—		
Carter-Fine et al, Stewart 1	*	840
P. F. Gwynn et al, Christian 2	*	1250
Romer Oil Co., McClutchey 1	*	1151
Pitzer & West et al, Morrison 5-A	260	2424
Simms Oil Co., Ribble 1	*	4257

TEXAS PANHANDLE

Company, Well and Location	Initial Production Bbls.	Depth
CARSON COUNTY—		
Empire G. & F. Co., Burnett 6	¶40	2412
GRAY COUNTY—		
Amagray Oil Co., A. Chapman 1	210	2786
Camel Oil Co., W. Harrah 1	270	3350
Danciger O. & R. Co. et al, Jackson 3	4250	2966
Navillus Oil Co., Fee 1	100	2839
Operators Oil Co., Bowers 2	¶20	3431
HUTCHINSON COUNTY—		
Phillips Pet. Co., Sanford-Land 1	530	2975

EAST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
HARRISON COUNTY—		
C. H. Lyon, Bryson 4, T. D. Wilson, sur	¶4	965
R. W. Torren, Vaughan 1, W. R. Anderson sur	¶5	974
A. L. Waller et al, Bryson 1, W. R. Anderson sur	¶2½	958
PANOLA COUNTY—		
Magnolia, Steele 11, B. C. Jordan sur	¶3	976
CHEROKEE COUNTY—		
Humble, Elliott 2, M. Windsor sur	¶5½	3603

EASTERN STATES

INDIANA

Company, Well and Location	Initial Production Bbls.	Depth
GIBSON COUNTY—		
William Bell & Co., Thompson 2	30	1305
Griggs & Co., Hussey 1	*	1914
J. S. Young & Co., Jenkins 3	*	1390
HARRISON COUNTY—		
Louisville Gas & Electric Co., Lemmon 1	¶½	700
Jones Agency 1	¶½	700
Bell Funk 1	*	750
DAVIESS COUNTY—		
Ruble & Collier, Walker 1	8	700
Phipps & Blosser, O'Brien 1	*	....
ALLEN COUNTY—		
Unknown parties, Al. Leuenberger 1	¶½	1410
DECATUR COUNTY—		
Hoosier Public Utilities Co., Stowers 1	¶¼	936
HAMILTON COUNTY—		
Lee Wood, Shadle 1	25	....
KNOX COUNTY—		
Murphy Oil Co., Cooper 2	8	1205
PIKE COUNTY—		
The Ohio Oil Co., Coffman 9	3	960
SHELBY COUNTY—		
Brandywine O. & G. Co., Bass 4	3	....
TIPTON COUNTY—		
Dean & Nash, Steele 1	*	1200

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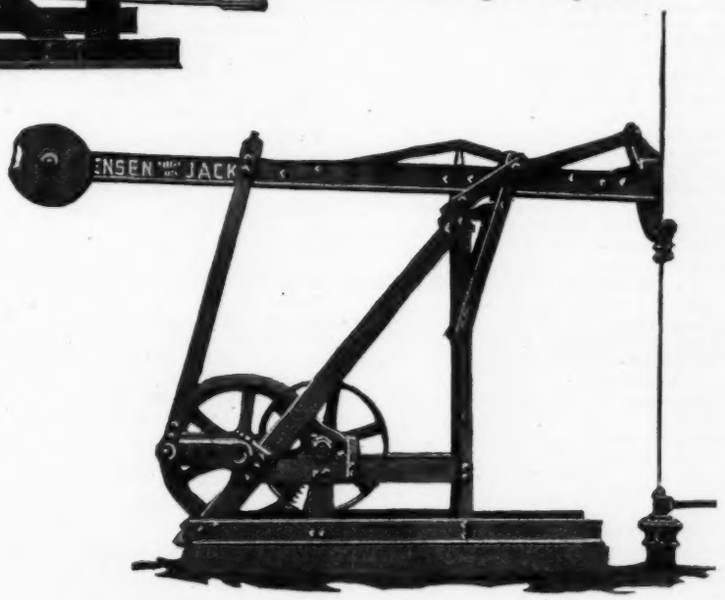

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ILLINOIS

Company, Well and Location	Initial Production Bbls.	Depth
CLARK COUNTY—		
Rhodes & Keith, Covalt 1	18	1584
LAWRENCE COUNTY—		
Silurian Oil Co., Ross 7	15	1683

PENNSYLVANIA

BRADFORD FIELD—		
South Penn Oil Co., Bingham-Satterfield 127	3	....
Bingham 400, tr 88	"	....
Bingham 533, tr 92	2	....
Bingham 439, tr 104	2	....
Bingham 450, tr 93	2	....
Fee 43	3	....
Fee 44	3	....
Fee 45	2	....
Fee 46	3	....
Cuthbertson 66	2	....
Cotton 58	2	....
Melvin 206	2	....
Hooker 23	2	....
Blair 59	2	....
Dent 115	2	....
Smith 153	2	....
Zimmer 06	2	....
Haven 28	2	....
Davis 32	2	....
Hazlewood Oil Co., No. 23, tr 103	2	....
No. 25, tr 20	2	....
No. 27, tr 138	2	....
Bingham 4	3	....
T. P. Thompson, Jr., Thompson 19	2	....
Phoenix Oil Co., Kane 3	4	....
Hope Oil Co., Richardson 7	3	....
Whitehead & Carson, Boyd 1	4	....
C. H. Williams, Moore 2	4	....
Pollock & Co., Riddle & Co. 3	3	....
Riddle & Co. 4	3	....
C. E. Potter, Russell 2	3	....
Zook & Sloan, Keating 21	4	....
Wright & Saph, Bingham 394, tr 5	3	....
W. N. Hunter, Hostetter 1	3	....
Skaggs Bros., Skaggs 1	5	....
G. W. Crooks, Est., Franchot 3	3	....
T. H. Kennedy, Kennedy 37	3	....
Bingham 490, tr 153	2	....
Bingham 490, tr 154	3	....
Kendall Ref. Co., Bishop 6	3	....
Hope Oil Co., Sill 9	2	....
L. G. Schenfield, Schenfield 1	3	....
Schenfield 2	3	....
Fitzgibbons & Wilson, Wilson 2	3	....
J. A. Hooper, Bingham 428, tr 14	2	....
BUTLER COUNTY—		
Bishop & Co., Wahl 1	¶1½	....
M. W. Graham & Co., Campbell 12	3	....
J. S. Walker, Knox 1	2	....
M. C. Maley & Co., Maley 1	2	....
Edward McKinney, McKinney 6	2	....
VENANGO COUNTY—		
W. T. Zimmerman & Co., Zimmerman 10	2	....
J. E. Hogue, Hogue 4	2	....
M. S. Hughes, Hughes 19	2	....
E. A. Burch & Co., Porter 99	2	....
John Diamond, Roe 10	2	....
J. L. Eakin, Kennerdell 55	2	....
CENTER-MIDDLE FIELD—		
T. J. Keenan, Lot 37, tr 1	2	....
McCool Bros.' Smith 1	2	....
GREENE COUNTY—		
Carnegie Nat. Gas Co., Patterson 1	*	....
Henderson 1	¶1¼	....
Dun-Mar O. & G. Co., Grin-King 1	*	....
Miller & Hoskins, Sellers 1	¶1¾	....
CLARION COUNTY—		
Hargenrader & Co., Dechant 1	¶	....
I. C. Hess, Berlin 3	¶1	....
Hefren Bros., Hefron 2	¶1	....
C. H. Wedekind & Co., Rowan 2	¶1	....
H. O. Fisher, Fisher 2	3	....
ALLEGHENY COUNTY—		
Getty & Purdy, Speer 1	4	....
BEAVER COUNTY—		
J. L. Abrams & Co., Hites 2	2	....

NEW YORK

ALLEGANY COUNTY—		
First Nat. Bank of Olean, Reid Agent 1	4	....
First Trust Co. & Co., Fee 1	3	....
J. K. Cochran & Co., McDermott 13	3	....
McDermott 14	3	....
A. C. A. Oil Corp., Fee 2	3	....
Herrick & Co., Herrick 1	3	....
Cuba National Bank Co., Fee 25	3	....
George A. Bradley, Bradley 1	3	....
First Trust Co., South Penn 94	2	....
Forest Oil Corp., Forest 345	2	....
Forest 401	3	....
Kinley Producers Co., Kinley 1	2	....
Allegany Oil Co., Hazlewood 67	2	....
Lebouth Lobough & Co., Ferrington 1	2	....
L. E. Jordan, Boyd & Jordan 5	*	....
L. W. Shaner & Co., Shaker 2	2	....
W. J. Hughes & Co., Hughes 2	2	....
L. V. Forness & Co., Forness 1	2	....
J. A. Galletts & Co., Carls 5	2	....
Carls 6	2	....

WEST VIRGINIA

DODDRIDGE COUNTY—		
Keystone Oil Co., Roberts 2	5	....
American Oil Dev. Co., White Hrs. 1	¶½	....
Norbell O. & G. Co., Roberts 5	¶½	....
RITCHIE COUNTY—		
Astron Oil Co., Stursburg Realty Co. 7	12	....
Hope Const. & Ref. Co., Hill 2	*	....
South Penn Oil Co., Wilson 8	*	....
ROANE COUNTY—		
Heck Oil Co., Vandale 1	¶1	....
Ira D. Cox, Cox 3	¶1½	....
S. W. Young, McClay 1	¶1¼	....
CALHOUN COUNTY—		
M. F. Crowley, Sturms 1	6	....
B. J. Crowley, Barnett 1	¶½	....
PLEASANTS COUNTY—		
O. L. Morgan, Morgan 1	*	....
Dinsmoor & Co., Cal Templeton 6	*	....
TYLER COUNTY—		
Sutton Bros., Shuman 1	60	....
HARRISON COUNTY—		
Clarksburg Light & Heat Co., Bramer 255	¶2¼	....
LEWIS COUNTY—		
Weed Smith & Co., Whelan 2	¶1½	....
GILMER COUNTY—		
Sears O. & G. Co., Campbell 1	¶1¼	....
LINCOLN COUNTY—		
W. C. Kingery, Kingery 1	¶½	....
WIRT COUNTY—		
Carnegie Nat. Gas Co., Davis 1	¶½	....

KENTUCKY

OHIO COUNTY—		
Young & Lee, Ezell 1	100	....
Wood Oil Co., Ralph 2	30	....
J. C. Ellis, Gossett 2	10	547
'Keith 2	20	538
Cundiff 2	20	690
Creek Drilling Co., Early 10	15	610
Ohio Oil Co., Ellis 11	5	669
Lowman & Daily, Maden 3	*	575
WARREN COUNTY—		
P. H. Lavelle, Hunton 10	20	1089
Orin Wood, Vaneeter & Co. 1	*	1226
ALLEN COUNTY—		
W. P. Harley, Riley Reed 3	*	275
The Allen Oil Corp., Motley 9	*	400
HANCOCK COUNTY—		
H. L. Ogle & Co., Corley 1	*	....

SOUTHEASTERN OHIO

WASHINGTON COUNTY—		
W. J. Todd & Co., Reynolds 2	5	....
O. S. Reckard, Dana 4	4	....
JEFFERSON COUNTY—		
Palmer & Co., Stroup 1	25	....

CENTRAL OHIO

GUERNSEY COUNTY—		
Birmingham O. & G. Co., Braniger 2	¶1	....
Braniger 3	¶1	....
Braniger 4	*	....
Braniger 5	¶2¾	....
Edinburn 2	¶½	....
Edinburn 3	¶½	....
Edinburn 4	¶1½	....
Ohio Fuel Gas Co., Tobin lot 1	¶½	....
MEIGS COUNTY—		
Sumner O. & G. Co., Roush 5	¶½	....
Edward Calderwood, Swearinger 2	¶¼	....
Ohio Fuel Supply Co., Williamson 1	*	....
Dailey Oil Co., Hybell 2	*	....
ATHENS COUNTY—		
Wehrle Interests, Maxwell 2	3	....
Watkins O. & G. Co., Earhart 4	5	....
GALLIA COUNTY—		
Gordon Oil Co., Grover 1	¶¾	....
PERRY COUNTY—		
Wehrle Interests, Feal 1	*	3510

OKLAHOMA

BECKHAM COUNTY—		
Magnolia, Beagle 2, nwc 28-9n-23w	¶38	2683
CARTER COUNTY—		
Magnolia, Gabriel 1, nwc sw, 23-1s-3w	80	2415
CREEK COUNTY—		
Wilcox O. & G. Co., Dixon 2, sec nw se 18-14-10e	125	3427
Producers & Refiners Corp., Harjo 4, sw se ne, 18-14-10e	320	3459
Ted Ray Oil Co., Littlehead 1, nec sw ne 13-17-10e	25	1897
C. G. Tibbens, Jackson 2, nwc se sw, 4-18-12e	¶5	2093
Continental Oil Co., Unallotted 1-A, 26-18-11e	100	1925
Bu Vi Bar Pet. Co., Benifield 1, sec 24-15-7e	15	3391
Grahoma Oil Co. et al, Vaughn 1, nec sw ne, 32-16-9e	*	2993
McCready Oil Co., Bruner 1, swc ne se, 3017-11e	*	1825
Kennedy & Horner et al, Strip 2, swc se se, 13-17-10e	*	2520
GARFIELD COUNTY—		
E. A. Summers et al, Vanderwork 1, nec nw, 31-21-5w	*	1665
GRADY COUNTY—		
Carter, Walford 8, sw se sw, 16-3n-5w	170	1913
E. P. Harwell, Pendley 1, c ne nw, 14-4n-8w	¶10	1790
Magnolia, Dryden 3, sw nw se, 35-5n-8w	¶33	2350
Garvin Drilling Co., Homer 1, sec ne, 18-4n-6w	*	2325
JEFFERSON COUNTY—		
Denton, Lash & McCall, Trout 1, se ne se, 18-7s-5w	20	836
KAY COUNTY—		
Gypsy, Chambers 3, sw se ne, 9-25-2w	75	4180
Larutan Fuel Co., Rembe 1, nwc, 29-27-1w	¶1	706
Marland, F. Gaylor 4, sec sw, 19-27-1w	¶1	702
Gypsy, Jameson 1, c se ne, 8-27-1w	10	3347
Chambers 2, se sw ne, 9-25-2w	*	4765
LINCOLN COUNTY—		
Magnolia, Teleford 1, nwc se, 7-14-4e	*	4780
McINTOSH COUNTY—		
W. F. Sessions, Foshee 3, cel se sw, 16-12-15e	¶5	668
Foshee 2, c s l se sw, 16-12-15e	*	735
Aggas & Sessions, Perryman 3, sec nw nw, 11-12-15e	*	1834
Perryman 4, nwc sw nw nw 11-12-15e	*	844
MUSKOGEE COUNTY—		
Sun Ray Oil Co., Hicks 1, nec sw, 5-14-19e	*	701
J. W. Hale et al, Kell 1, nec nw ne nw, 7-14-19e	*	959
OKMULGEE COUNTY—		
Kirkland & Son, Bell 7, nwc se nw, 17-15-13e	10	1430
Hutchinson & Becker, Doyle 4, swc se nw, 6-14-13e	8	2140
W. B. Pine, Skidmore 2, cel se nw, 10-15-14e	15	996
J. W. Sharpe et al, Colbert 4, cwl ne nw 16-14-14	18	1270
E. J. Lambert, Sango 2, csl ne sw, 21-13-15e	¶1	1698
Lakeside O. & G. Co., Voorhies 1, sec nw sw 26-13-11e	*	2500
OSAGE COUNTY—		
Kewanee O. & G. Co., 2, sec ne, 3-26-6e	1245	2813
Okla. Nat. Gas Co., 778, sec sw sw, 6-21-12e	¶1	1364
PAWNEE COUNTY—		
Sheltz et al, Walis 2, c nw ne 5-20-8e	20	2513
PONTOTOC COUNTY—		
W. R. Ramsey, Webb 2, nw ne sw, 20-5n-8e	720	2527
La. Oil Ref. Co., McElroy 2, swc se, 17-5n-8e	1000	2474
Amer. O. & R. Co., Daniels 1, c n l se, 27-5n-6e	*	2135
Shaffer, Gilcrease 1, nwc ne, 36-5n-7e	*	2340
POTTAWATOMIE COUNTY—		
Magnolia, Bryant 5, nw se nw, 9-9-5	120	4327
Barnsdall, Gibson 8, sw nw ne, 9-9-5	45	4375
Continental Oil Co., Doyle 3, nec sw, 19-7n-4e	1130	3762

Company, Well and Location	Initial Production Bbls.	Depth
SEMINOLE COUNTY—		
Gypsy, Sango 4, sw nw se 1-9-5	1085	4404
The Texas Co., Anderson 1, ne se se, 2-9-5	225	4399
Carter, Paine 4, sw nw se, 12-9-5	230	4305
Amerada, Strothers 2, se nw ne 3-9-6	630	4335
Wilcox O. & G. Co., Cluck 7, nw ne nw, 4-9-6	1015	4442
Carter, Melisa 1, se ne sw, 9-8-6	1335	4229
Mid-Continent Pet. Corp., Smith 4, se sw sw, 12-8-6	400	4215
I. T. I. O., Fay 1, sw nw sw, 13-8-6	760	4367
Continental Oil Co., Cosat 1, sec nw, 36-8-6	600	4477
Mid-Continent Pet. Corp., Wadsworth 6, nw se sw, 36-8-6	1950	4136
I. T. I. O. Co., Phoebe 2B, sw ne sw, 36-8-6	805	4218
Phoebe 3B, nec sw, 36-8-6	720	4444
Gypsy, Wadsworth 1, nwc se, 1-7-6	30	4255
I. T. I. O., McCulla 2, nw se nw, 1-7-6	620	4149
Soketheche 3, sw nw ne, 1-7-6	1088	4227
Roxana, Smith 1, sw ne ne, 1-7-6	40	4254
The Texas Co., Coker 1, nwc sw, 1-7-6	255	4158
Coker 3, se ne sw, 1-7-6	780	4238
Amerada, Nitey 4, nw se ne, 2-7-6	1070	4319
Shaffer, Clark 8, ne sw se, 1-9-5	*	....
Magnolia, Dixon 3, ne se sw, 12-9-5	*	4488
Empire G. & F. Co., Karr 1, nwc sw, 34-9-5	*	5028
Pure Oil Co., Strothers B8, se nw nw, 36-9-5	*	4130
I. T. I. O., Davis 3, sw se sw, 13-8-6	*	4359
Carter, Bowlegs 3, sw se sw, 15-8-6	*	4220
I. T. I. O., Goforth 8, ne nw ne, 15-8-6	*	3600
Soketheche 4, se nw ne, 1-7-6	*	4615
STEPHENS COUNTY—		
Tuchy et al, Edwards 1, sec ne nw ne, 10-3s-5w	10	1037
Tom Medlin, Taliaferro 1A, sec sw se sw, 27-1s-8w	60	1702
Dameron et al, Florence 1, nec nw se 11-3s-6w	*	850
Magnolia, Hovey 1A, sec, 15-1s-8w	*	3004
Morgan 4, nwc ne se, 32-1n-8w	*	2420
TULSA COUNTY—		
S. W. Anthony, Sanderson 8, c n l nw, 3-16-12e	¶3	1710
Jackson & Wise, Sango 2, c w l sw ne, 21-19-12e	25	1580
Sand Springs Home, Gates 2, c n l se ne, 4-19-11e	*	2250
WAGONER COUNTY—		
Knox & Shouse, Harris 1, c sw se, 12-17-16e	*	817

KANSAS

Company, Well and Location	Initial Production Bbls.	Depth
COFFEY COUNTY—		
Sheedy et al, Hanner 2, ne sw sw, 11-23-13e	20	1803
COWLEY COUNTY—		
Wakefield et al, Winfield 1, lot 1, blk 41, 22-32-4e	¶8	2517
Shawver et al, Myers 1, sec sw ne, 29-30-5e	*	2356
Barnsdall, "S" Thurlow 2, swc se ne, 7-33-3e	*	....
GREENWOOD COUNTY—		
Theta Oil Co., Fankhouser 1, sec, 23-22-12e	320	1703
Empire G. & F. Co., Demler 3, nec, 25-22-12e	360	1735
Demler 4, nec, 25-22-12e	50	1698
Ott 4, nec nw nw, 25-22-12e	400	1717
Darby Pet. Co., Schwab 1, swc nw nw, 30-22-13e	300	1748
Lassen et al, Wilkerson 2, swc ne nw, 7-25-9e	25	2288
Federal Oil Co., Storrer 2, nwc, 30-22-13e	*	1775
Shaffer & Howell, Schwab 1, lot 5n, nw nw, 30-22-13e	*	1875
Gross et al, Brown 1, nec se, 15-25-13e	*	1657
Ballard et al, Fair Grounds 1, nec se ne, 2-26-10e	*	2076
Wahn et al, Westphal 1, nec nw nw, 2-26-10e	*	2060
Culp et al, Lesseny 1, sec ne ne, 33-27-13e	*	1790
McPHERSON COUNTY—		
The Texas Co., Chinsberg 1, nwc ne nw 32-18-2w	¶7	2967
MARION COUNTY—		
Frank et al, Urich 1, swc nw nw, 9-19-4e	*	....
RUSSELL COUNTY—		
Mid West Ref. Co., Austin 21, nec sw sw, 30-12-15w	75	3063
SUMNER COUNTY—		
Champlin Ref. Co., Love 1, nwc ne sw, 9-30-2w	45	3049
"B" Latta 2, sec sw nw, 9-30-2w	¶5	2031
Shawver et al, Oxford 1, lot 8, blk 85, 11-32-2e	800	2138
Roxana, Taton 2, sec sw ne nw, 36-31-2e	700	1931
Emerich 1, cel sw ne, 14-32-2e	300	2094
Community 5, lot 9, blk 37, 14-32-2e	300	2117
Community 4, lot 6, blk 52, 14-32-2e	900	2116
Community 6, lot 4, blk 66, 14-32-2e	800	2115
Van Winkle 1, outlot 28, 14-32-2e	45	2132
Flitch et al, Townlot 1, lot 16, blk 17, 11-32-2e	*	2196
Townlot 1, lot 3, blk 18, 11-32-2e	*	2154
Townlot 1, lot 16, blk 1, 12-32-2e	*	....
Derby Oil Co., Townlot 1, lot 9, blk 11, 12-32-2e	*	....
Ozark Drilling Co., Townlot 1, lot 6, blk 15, 12-32-2e	*	2249
Palmer et al, Cravens 1, swc nw, 12-32-2e	*	3205
Moore et al, Townlot 1, lot 29, blk 31, 12-32-2e	*	2629
Trees Oil Co., Oxford 1, lot 17, 12-32-2e	*	2292
Midco Oil Co., Oxford 1, lot 14, blk 48, 13-32-2e	*	....
Wenzel et al, Townlot 1, lot 15, blk. 41, 13-32-2e	*	....
Ramsey et al, Caldwell 1, swc ne, 22-32-2e	*	....
Roxana, Jeffie 1, c nw 36-32-2e	*	3533
Basom et al, Melick 1, nec 21-33-2e	*	....
WOODSON COUNTY—		
Brinegar et al, Rogers 1, sec sw se, 14-26-14e	*	1342

CALIFORNIA

Company, Well and Location	Initial Production Bbls.	Depth
ATHENS-ROSECRANS—		
Barnsdall Oil Co., O'Dea 14	1600	5810
BALDWIN HILLS-INGLEWOOD—		
Standard, B-C, C63	60	1895
EAST COYOTE—		
Chicksan Oil Co., Basten 2	100	4100
HUNTINGTON BEACH—		
Cloud Oil Co., H. T. 1	200	2865
Miller & McAlden, No. 1	100	2110
Davis, Haynes & Thompson No. 1	100	2100
LONG BEACH—		
E. B. Campbell, State 1	2500	6025
Richfield Oil Co., Kelly 1	4100	5760
Travis Drilling Co., McMillan 1	3100	6075
RICHFIELD—		
Associated Oil Co., Kammerer 8	650	4405
ROUND MOUNTAIN—		
Grimes Oil Co., No. 1, 14-28-28	*	3040
SEAL BEACH—		
Associated Oil Co., Bryant 22	135	5900
Dill & Comstock, Alamitos 1	50	5340
Marland Oil Co., Selover 1	1500	4890

LOUISIANA

Company, Well and Location	Initial Production Bbls.	Depth
BOSSIER PARISH—		
Magnolia, Roberson 23-23-12	¶36¼	3077
CADDO PARISH—		
Arkansas Fuel Oil Co., Bashara 2, 23-21-15	400	3900
Blechic & Laskey, Sharp 3, 10-18-16	¶1½	910
The Texas Co., C. M. L. 49, 23-21-15	220	3909
OUACHITA PARISH—		
Hatcher & Evans, Hatcher 6, 16-19-4e	¶2	2209
Imperial O. & G. Co., Tubbs 2, 13-19-3e	¶4	2155
WEBSTER PARISH—		
Magnolia, Cox 3, 23-21-10	¶3	4518

ARKANSAS

Company, Well and Location	Initial Production Bbls.	Depth
OUACHITA COUNTY—		
Exchange Oil Co., Berg 4, 4-16-15	¶6	2599
UNION COUNTY—		
W. R. Keever, et al, Ezell 3, 12-17-15	25	2136

"OILWELL" PRODUCTION HOISTS TO RUSSIA

The Oil Well Supply Company recently shipped 20 "Oilwell" Production Hoists to Russia on an order obtained by their New York Office.

These hoists were built at the Imperial Works of the Oil Well Supply Company, and are designed with special reference to extreme service.

PERMITS GRANTED FOR NEW WELLS

WEEKLY COMPARISON OF NEW WELLS

Following is a condensed table giving a comparison of permits or locations made for new wells during the past year in Kansas, Oklahoma, Arkansas, Louisiana, Texas, California and the Mountain States:

	Week ending Nov. 25	Previous week	Total this month	Total this year	This week last year	This month 1926	Total same date 1926	Year total 1926
Arkansas	5	5	21	304	11	35	1,008	1,046
California	22	21	80	1,072	23	105	1,293	1,389
Louisiana	16	20	71	741	9	73	1,382	1,463
Kansas	23	13	101	869	45	154	1,759	1,905
Oklahoma	75	58	269	3,407	134	470	6,243	5,584
Texas	135	176	622	7,995	264	958	12,144	12,978
Mountain States	...	8	51	431	11	84	728	*794
Totals	276	301	1,215	14,819	497	1,879	23,557	25,159

*First four months of 1926 not included.

OKLAHOMA

BECKHAM COUNTY — Skelly Oil Co., Poarch 1, ne nw ne 28-9n-23w.

CARTER COUNTY—Magnolia, Brooks 2, nwc ne 11-2s-3w.

CREEK COUNTY—Wilcox O. & G. Co., Wolfe 5, swc ne 16-14-10e. Dixon 4, nwc se, 18-14-10e. Kimble & Reading 1, sec nw 18-14-10e. Kennedy & Horner et al, Strip 2, sec sw nw 24-18-11. McCulloch Oil Co., Burnett 1, nw c ne ne, 22-18-11e. Roxana, Clark 2, ne c se nw 18-19-9e.

GRADY COUNTY—Marland Oil Co. and Joe Ray; Woods 3, ne se ne 17-3n-5w; Burks 3, nw c sw, 16-3n-5w. Harwell et al, Pendley 2, c ne nw, 14-4n-8w. Oklahoma Gas Utilities Co., Heathley 2, nw c ne 2-4n-8w; Sanford 2, ne c se sw, 23-5n-8w.

HUGHES COUNTY—Carter Oil Co., Alexander 6, nw se ne, 19-8-10e.

KAY COUNTY—Barnsdall Oil Corp. & Margay Oil Corp., Kirwan 1, nw c 2-25-2w. Larutan Fuel Co., Rembe 2, ne c nw sw 29-27-1w. Wentz Oil Corp., Blackwell Country Club 1, sw c, 20-27-1w. Fred Morgan, Elder 1, nw c sw, 29-28-1e. Ivan Otstot et al, School Land 1, nw c ne sw, 36-28-1w. Nehr Oil Co., School Land 1, c nw se 36-28-1w. Harris & Haun, Tickle 1A, se c, 25-29-1w.

LOGAN COUNTY—Healdton O. & G. Co., Gragg 1, sw c, 29-18-4w. Roxana, McDaniels 1, ne c sw, 16-18-4w.

MUSKOGEE COUNTY—Hillside O. & G. Co., Sango 10, c sw sw, 28-15-15e. J. L. Slusher et al, Fewel 1, c w l sw nw, 6-14-17e. E. J. Lambert, Grayson 2, ne c se, 22-13-15e. J. W. Hale, McDaniel 1, ne c nw sw se, 6-14-19e.

OKFUSKEE COUNTY—Mid-Continent Pet. Corp., Morris 1, ne sw nw, 29-10-9e.

OKMULGEE COUNTY—J. E. Wallace, Colbert 4, ne c sw se, 14-14-14e. Indep. O. & G. Co., Wilson 5, se c nw se 7-12-12e.

OSAGE COUNTY—Prairie O. & G. Co. et al 6, ne se ne, 20-27-6e; 7, se c ne, 20-27-6e. Kewanee O. & G. Co. 5, ne se ne, 3-26-6; 6, nw se ne, 3-26-6e; 7, ne sw ne, 3-26-6e; 8, se nw ne, 3-26-6e; 9, sw ne ne, 3-26-6e. Winona Oil Co. 2, ne c nw ne ne, 18-29-11. Verland Oil Co. 8, ne sw ne, 17-21-12e. Pueblo Pet. Co. 4, cwl sw se, 14-21-8e. Delmar Oil Co. 4, ne c sw se, 17-23-10e. C. B. Peters 1, cnl ne, 21-23-9e. I. T. I. O., 385, ne c nw, 29-23-8e; 384, ne c sw se, 20-25-12e; 386, nw ne nw, 17-27-11e; No. 387, se c sw ne ne, 17-27-11e.

PONTOTOC COUNTY—Homaokla Oil Co., Watson 2, se c ne sw, 33-5n-8e. Louisiana Oil Ref. Co., Warfle 5, sw c ne, 20-5n-8e. La. Oil Ref. Co., Harjo 6, ne sw sw, 17-5n-8e. Shaffer O. & R. Co., Gilcrease 1-A, nw c ne, 36-5n-7e. Sinclair O. & G. Co., McDaniel 1, nec, 17-5n-6e.

POTTAWATOMIE COUNTY—Indep. O. & G. Co., Knapp 8, se nw ne, 8-9-5. I. T. I. O., Sullivan 1, sw nw se, 25-7n-3e. Amerada, Neghnguit 1, se c nw 19-7n-4e. Twin State Oil Co., Spangy 5, nwc se, 19-7-4e. Mid-Continent Pet. Corp., Smith 1, nw c se, 25-7-4e. Magnolia, Harper 2, se nw ne, 19-7-5.

SEMINOLE COUNTY—Magnolia, Hyde 1, nw se nw, 13-9-5; Hammond 3, sw nw ne, 10-8-5. Twin State, Jones 3, se ne se, 11-8-6. Mid-Continent Pet. Corp., Smith 8, nw sw sw, 12-8-6. I. T. I. O. Co., Davis 6, nw se sw, 13-8-6. Sinclair O. & G. Co. and Darby Pet. Co., Johnson 1, nw c sw, 5-7-7. Gypsy, Cecil 1, sw c ne, 19-7-7e.

SEQUOYAH COUNTY—Hunt et al, Ralph 1, c se nw sw, 12-12-23e.

STEPHENS COUNTY—Pace et al, Fobb "C" 2, sw nw se, 12-2s-8w. Magnolia, Bell-Savage 1, ne se nw, 3-1s-4w. Pearce & Brown, Wilkinson "B" 1, sw c se, 27-1s-8w. Clark & Cowden, School 1, se nw se, 36-2n-9w.

TULSA COUNTY—S. W. Anthony, Sanderson 9, c s l nw nw, 3-16-12e. Mallory et al, McIntosh 1, nw c se nw, 28-19-14e. Glidden Oil Corp., Wray 1A, sw c nw, 35-19-13e. A. A. Davis, Perry 3, c e l se nw, 21-19-21e.

WAGONER COUNTY—Peterson & Young, Jameson 1, c ne sw, 23-16-16e.

WOODWARD COUNTY—Burgoyne Bros. 1, sw se ne, 15-21-19w.

KANSAS

BUTLER COUNTY—Liggett et al, Tavender 1, nw c se, 24-28-6e.

COFFEY COUNTY—Sheedy et al, Hanner 3(sw c se sw, 11-23-13e.

COWLEY COUNTY—Little Martha Oil Co., Sandstrum 1, swc, 24-33-6e.

ELK COUNTY—Watchorn O. & G. Co., Denton 10, swc nw, 3-30-9e. Elk Pet. Co., Denton 1, nec se, 4-30-9e. Elmwood Oil Co. et al, Hugg 1, ne c, 22-30-10e. Hood & Co., Eyman 2, c n l se se, 9-31-10e. Denaman et al, Lewis 1, se c, 35-31-10e.

GREENWOOD COUNTY—Empire O. & R. Co., Duby 18, nw c se sw, 14-22-11e. Empire O. & R. Co., Garth 4, sw c ne ne, 24-22-11e. Theta Oil Co., Fankhauser 2, sw c se se, 23-22-12e. Empire O. & R. Co., Demler 5, ne c, 25-22-12e; Demler 6, nw c ne ne, 25-22-12e; Schwab 3, se c ne ne, 25-22-12e; Schwab 4, swc ne ne, 25-22-12e; Ott "B" 2, nw c ne ne, 25-22-12e.

HARPER COUNTY—Amerada, Medeville 1, c se ne, 24-34-6w.

SEWARD COUNTY—Wilson & Moore, Boles 2, sec nw, 3-35-34w.

SUMNER COUNTY—Roxana, Community 9, lot 7, blk 36, City of Oxford, 11-32-2e. Derby Oil Co., Spence 2, tr 3, City of Oxford, 14-32-2e. Shawver & Jarvis, Scroggins 2, Midland Ry City of Oxford, 14-32-2e. Roxana, Rothwell 1, sec ne sw, 14-32-2e. Wasson et al, Gassoway 1, nec se sw, 14-32-2e.

TEXAS

ARCHER COUNTY—R. B. Irvin et al's Brownwood, Ball 1, A. Nunley sur, 1320 ft from e and 1170 ft from s line. Hamilton, Erwin, Stidham & Thrasher, Wichita Falls, Midden 1, S5, B 4, H&TC sur, 150 ft from s and w lines. Rhader & Carey, Wichita Falls, Farmer 2, J. Poitevent sur, 137 ft from w and 150 ft from s line. L. T. Burns, Wichita Falls, Fee 2, B 23, J. W. Harris sur, 150 ft from n and 1036 ft from e line. Lowry-Weldon Co., Wichita Falls, Cuba 1, B 5, G. P. Meade sur, 150 ft from s and w lines. Gray County O. & G. Co.'s Wichita Falls, Estill 1, N. H. Jose sur, 150 ft from s and e lines. Harris & Gose, Wichita Falls, Farmer 1, W. C. Winters sur, 360 ft from w and 150 ft from s line. Texas Co., Wichita Falls, Wilson 1, S 103, Amer Trib sur, 660 ft from n and e lines. Jones & Holcomb, Wichita Falls, Hawley 1, B 80, Holliday sur, 150 ft from n and w lines. Continental & Consolidated Oil Co.'s Wichita Falls, Netherton 6, B 95, Amer Trib sur, 302 ft ne of No. 4. H. C. Wright, Abilene, Wilson 1, S 2, J. W. Scott sur, 450 ft from n and w lines. Continental & Perkins & Cullum, Wichita Falls, Wilson 6, B 114, Amer Trib sur, 492 ft from n and 452 ft from w line. Burns & Texas Co., Wichita Falls, Turbeville 1, S 124, HSCR sur, 150 ft from n and w lines. Jeffers & Jeffers, Wichita Falls, Taylor 1, B 30, DCSL sur, 150 ft from n and w lines. T. I. Goodwin, Wichita Falls, Coleman 1, B 27 BCSL sur, 150 ft from s and w lines.

AUSTIN COUNTY—W. C. Carlisle, Brenham, Pomycal 1, T. M. Williams sur, 50 ft from s and e lines. Humble, Houston, Wilson 1, W. Harvey sur, south corner.

BROWN COUNTY—C. F. Lehman, Fort Worth, Evans 3, No. 620 T. Woodward sur, 935 ft from w and 660 ft from s line.

BEXAR COUNTY—Schimmel Prod. Co., Ft. Worth, Koehler 16, C. A. Yoakum sur, 574 ft from e and 852 ft from s line; 17, 525 ft s of No. 15.

BRAZORIA COUNTY—Rycade Oil Corp., Houston, Wisdom 19, H. N. Cleveland sur, 1000 ft from e and 938 ft from s line; 20, 1300 ft from e and 488 ft from s line.

CALLAHAN COUNTY — Martin, Reed & Groce, Baird, Hatchett 1, S 1, D&D Asy sur, 300 ft from e and 150 ft from s line. Empire G. & F. Co., Wichita Falls, Snyder 1, S 139, BBB&C sur, 150 ft from n and w lines. Hadley & Sample, Putnam, Cunningham 2, S 136, Univ. Lands sur, 150 ft from s and w lines. W. R. Andrews et al, Putnam, Williams 71, No. 1 sur, 660 ft from n and 150 ft from e line. Prairie O. & G. Co., Ranger, Long 1, G. M. Vigal sur, 150 ft from s and w lines. W. C. Mee et al, Abilene, Williams 2, S 3, T&NO sur, 150 ft from n and w lines. W. H. Bradstreet, Cross Plains, Long 1, B 62, CCSL sur, 450 ft from w and 150 ft from s line. G. C. Curry, Putnam, Brandon 1, S 3, Bayland Asy sur, 150 ft from w and 450 ft from s line. Kuhlemeier-Kleiner Oil Co., Putnam, Pruett 17, s 2278 TE&L sur, 1110 ft from w and 150 ft from s line; 6, 450 ft from w and 150 ft from s line.

COMANCHE COUNTY—C. B. Hubbard, Eastland, Foster 1, S 54, Thompson sur, 150 ft from w and 510 ft from n line.

COOKE COUNTY—Simms Oil Co., Dallas, Bowers 1, T. Toby sur, 150 ft s of center of n line.

COLEMAN COUNTY—Archie Shaw, Burkett, Burns 34, A. Wickson sur, 1261 ft from n and 2250 ft from e line. McCamey & Ertel, Coleman, Rae 2, No. 301 J. B. Bealle sur, center.

CRANE COUNTY—Gulf, Fort Worth, McElroy 45, S 200, B F, CCSD & RGNG sur, 660 ft w of No. 43.

EASTLAND COUNTY—Atwood & Hannold, Ranger, Davis 1, S 66, B 66, McL. C.S.L. sur, 150 ft from s and e lines. Chestnut & Smith Corp., Breckenridge, Kurklin 1, S 62, B 4, H&TC sur, 500 ft from n and w lines.

EDWARDS COUNTY—W. W. Allison, Menard, Turney 1, S164, 708 ft from w and 2600 ft from s line.

FORT BEND COUNTY—Sun Oil Co., Beaumont, Farmer 4, J. Scott sur, ne of No. 2.

GRAYSON COUNTY—Miller Drilling Co., Fort Worth, Mauldin 1, T. E. Jones sur, 200 ft from n and 150 ft from w line.

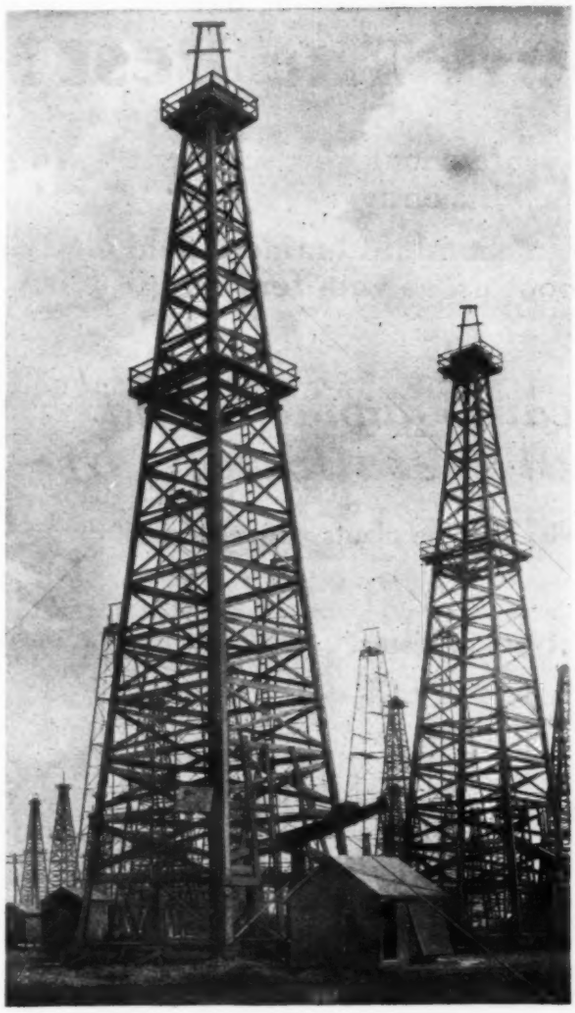
GLASSCOCK COUNTY—Magnolia, Dallas, Roberts 2, S 29, B 157, W&NW sur, 330 ft from n and e lines.

GRAY COUNTY—C. E. Pollard, Pampa, Bowers 1, S 119, B B2, H&GN sur, 330 ft from s and e lines.

HOWARD COUNTY—Schermerhorn Oil Co.,

2750 Feet In Five Days!

FROM the Spindle Top Field of Texas this record-breaking performance was recently reported. A clipping from the Beaumont Enterprise of Beaumont, Texas, reads:



Yount-Lee Davis No. 2 which was started Saturday, will probably set a record for the number of days to be spent on drilling, it was indicated today when it was learned that approximately 500 feet a day has been made in the hole since the time it was started. The first day the driller made around 700 feet. It is estimated that this well will take but five drilling days before the contract depth is reached.

Here's what actually did happen. The well was drilled the required depth of 2750 feet in five days with *only 6 Stellited bits.*

An unusual performance! Yet Stellited tools usually give unusual performances. And there is nothing particularly strange about this because Haynes Stellite (the metal with which Stellited tools are faced), resists abrasion better than any other metal.

Try out Haynes Stellite yourself. You can make Stellited bits right in your own shop. Simply melt a rod of Haynes Stellite in the oxy-acetylene flame and deposit a coating of the metal on the heated surface of the bit.

Our booklet, "Haynes Stellite in the Oil Fields," will interest you. It explains the procedure in detail.

HAYNES STELLITE COMPANY
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Motors for drilling and pumping wells, gasoline plants, refineries and pipe line duty.

Transformers for all purposes.

Generators and switchboards for all types of plants.

Lighting systems for gasoline plants, refineries, etc.

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PUMPING UNITS (GEARED)	Philadelphia Gear Works.
COMPENSATORS (Automatic Vapor-proof)	Electric Controller and Mfg. Co.
COUNTERSHAFTS	Western Iron and Foundry Company.
FLOOD LIGHTS	Electric Service Supplies Co.
GENERATORS	Electric Mchy. and Mfg. Company.
MOTORS	Wagner Electric Corporation and Electric Machinery and Supply Company.
SWITCHBOARDS AND PANEL-BOARDS	Wm. Wurdack Elec. Mfg. Company.
LIGHTING PLANTS	Kohler Company.
STATIC CONDENSERS	Electric Mchy. and Mfg. Co.
TURBINES	Terry Steam Turbine Company.
TRANSFORMERS	Wagner Electric Corp.
REDUCTION GEAR UNITS (Spur, Worm and Double Herringbone)	Philadelphia Gear Works.

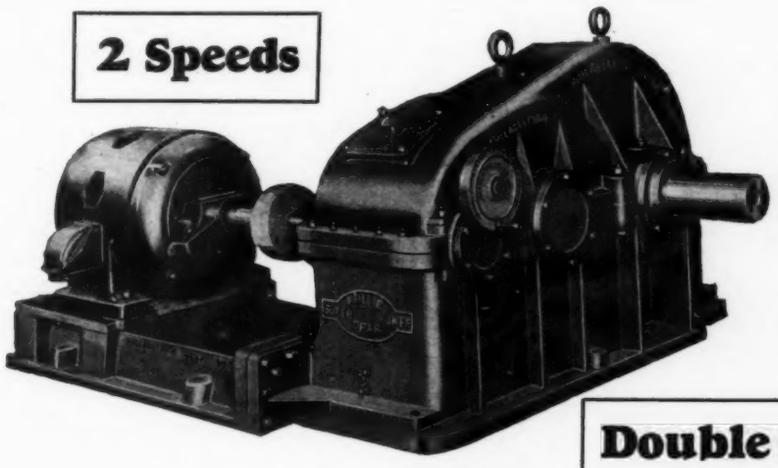
Petroleum Electric Company

Incorporated in Oklahoma

217 East Archer Street TULSA, OKLAHOMA

T. D. Williamson, President. C. F. Dagwell, Secretary-Treasurer

2 Speeds



Double Reduction

Guaranteed to be over 90% Efficient

The Philadelphia Oil Well Pumping Unit

This Unit was designed and built after studying the "shortcomings" of various pumping units in actual Service, the purpose being to produce a Unit which would give: Slow Pumping Speed, High Crank Speed (for redrilling or completing), and High Sprocket Speed (for Driving Rod and Tubing Hoist).

AN OIL WELL PUMPING UNIT IN WHICH THESE "DIFFERENT SPEEDS" COULD BE OBTAINED WITHOUT THE WASTE OF TIME AND MONEY INVOLVED IN REMOVING THE TOP OF THE GEAR CASING AND GEARS—AND THEN PUTTING IN NEW GEARS AND REPLACING COVER, ETC.

THE PHILADELPHIA 2-SPEED, DOUBLE REDUCTION OIL WELL PUMPING UNIT not only fulfills these requisities (by merely turning a PROPERLY INDICATED HANDWHEEL), but has the following advantages:

IT IS SELF-CONTAINED WITH MOTOR AND COUPLING, WHICH ENABLES IT TO BE EASILY TRANSPORTED, AND WHICH KEEPS IT IN PROPER ALIGNMENT.

IT ELIMINATES THE USUAL BAND-WHEEL AND ITS ATTENDANT BELTS, CHAINS, PULLEYS OR SPROCKETS.

IT IS IMPERVIOUS TO ATMOSPHERIC CONDITIONS, ACIDS, DIRT, ETC.—BECAUSE THE GEARS AND BEARINGS, ETC., ARE "HERMETICALLY SEALED."

IT IS LONG LIVED, AND LOW IN UPKEEP COST; THE ONLY ATTENTION IT REQUIRES IS AN "OCCASIONAL OILING."

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Tulsa, Okla., Roberts 1, S 157, B 29, W&NW sur, 330 ft from n and w lines. Ward Oil Corp., Ardmore, Okla., Roberts 1, S 137, B 29, W&NW sur, 150 ft from n and e lines. Coyle-Concord Oil Co., San Antonio, Roberts 2, S 156, B 29, W&NW sur, 1480 ft from e and 820 ft from s line. Magnolia, Dallas, Chalk 9, S 125, B 29, W&NW sur, 660 ft e of No. 8; Hyman 4, S 113, B 29, W&NW sur, 660 ft from s and e lines. Flowers & O'Neil, Wichita Falls, Flowers 1, S 42, B 31, 1320 ft from n and e lines.

HARRIS COUNTY—Houtex Oil Co., Houston, H. A. Trapier 1, No. 51 J. Hamilton sur, ne cor. A. L. Fondren, Houston, Mason 6, Dunman sur, 75 ft n of No. 5. H. R. Cullen et al, Fee 4, S 98, J. Hamilton sur, 200 ft ne of No. 3. J. G. Sutherland, Houston, Hirsch 1, J. B. Jones sur, west central.

HARRISON COUNTY—State Line O. & G. Co., Shreveport, La., Mullins 2, No. 809 T. D. Wilson sur, 1650 ft from w and 180 ft from n line. Tylong O. & G. Co. Inc., Shreveport, La., Vaughn 1, W. R. Anderson sur, 214 ft from n and 494 ft from e line.

HUTCHINSON COUNTY—L. W. Timms, Amarillo, Jordan 1, S 124, B 4, I&GN sur, 330 ft from n and e lines.

HARDIN COUNTY—East Batson Oil Co., Batson, Batson 7, F. H. Green sur, 25 ft from s and 50 ft from e line.

JACK COUNTY—Amerada, Cisco, Fry 1, M. Putnam sur, 1500 ft from n and 2255 ft from e line. J. W. French, Fort Worth, Knox 1, D. Rathburn sur, 150 ft from n and e lines. R. J. Wixon, Eldorado, Kan., Ellis 3, J. Williams sur, 150 ft from n and 467 ft from e line. Dale Oil Corp., Wichita Falls, Hanna 4, 3313 T. E. & L. sur, 300 ft s of No. 1.

JIM HOGG COUNTY—M. 1. Shaw et al, Hebbronville, Jones 1, No. 831, blk 12, 486 ft from w and 171 ft from s line.

LIMESTONE COUNTY—J. H. McCarty, Groesbeck, Browder 1, J. O. Moore sur, 150 ft from s and e lines. E. L. Smith Oil Co., Mexia, Ellison 1, 2, 3, 4, 5, 6, 7, P. Varela sur. Transcontinental Oil Co., Mexia, Lewis 3, P. Varela sur, sw corner.

MONTAGUE COUNTY—Sinclair Oil Co., Fort Worth, Dennis 1, F. Robertson sur, 150 ft from n and 1650 ft from e line. McGinley Corp., Fort Worth, Paine 1, Wm. Donoho sur, 1000 ft from w and 500 ft from n line.

MILAM COUNTY—Parkhill Oil Co., Rockdale, Rettig 2, T. J. Chambers sur, 180 ft e of No. 1.

PALO PINTO COUNTY—Dubose & Leiser, Mineral Wells, Stuart 10, S 62, blk 4, T. & P. sur, 350 ft from e and 1600 ft from s line. Cranfill & Reynolds, Cisco, Gilbert 2, S 38, blk 38 B A, T&P sur, 660 ft from n and w lines.

NAVARRO COUNTY—Corsicana O. & R. Co., Corsicana, Springfield 1, blk 11, W. P. Lane sur, 300 ft from n and 150 ft from w line.

NOLAN COUNTY—J. H. Winemiller Corp., Tulsa, Okla., Arledge 1, S 216 B La, H. & T. C. sur, center.

PECOS COUNTY—Allsman & Bell, Fort Stockton, Pecos River 11, Kilpatrick sur, center; 9, same sur, se of No. 1; 10, same sur, se of Ne. 9; 6, same sur, nw of No. 5; 7, same sur, nw of No. 6; 8, same sur, nw of No. 7; 5, same sur, nw of No. 4. California Co., Colorado, Smith 5, S 35 blk 194, G. C. & S. F. sur, 618 ft e of No. 4. 4, same sur, 1406 ft from n and 1565 ft from w line. Humble, Wichita Falls, Smith 4, S 36, blk 194, G. C. & S. F. sur, 330 ft from s and e lines.

PANOLA COUNTY—D. Thomason, Shreveport, La., Crenshaw 1, J. Womack sur, 285 ft from n and e lines. Bethany O. & G. Co., Shreveport, La., Burns 4, W. A. Birdsong sur, 3700 ft from w and 700 ft from s line. Richardson 3, J. Yarnell sur, 444 ft from e and 557 ft from s line; 2, same sur, se corner.

RUNNELS COUNTY—Empire G. & F. Co., Wichita Falls, Gray 1, S 147, E. T. Ry sur, 660 ft from s and 2092 ft from e line.

SHACKELFORD COUNTY—Scott & Walker, Albany, Huskey 19, T. E. & L. sur, 300 ft n of No. 14. A. J. Hughes, Albany, Hill 1, S 40, Blind Asy. sur, 150 ft from n and w lines. T. G. Shaw, Fort Worth, Rice 10, S 44, Bayland Asy. sur, 150 ft from w and 750 ft from s line. Edgar 17, S 20, Bayland Asy. sur, 300 ft ne of No. 14; 18, same sur, 300 ft ne of No. 10. C. W. Somner, Albany, Thorp 1, S 6, Blind Asy. sur, 200 ft from e and 150 ft from s line.

TARRANT COUNTY—A. L. Greenman, San Antonio, Miller 1, J. E. Harrell, 250 vs from n and 483 vs from w line.

UPTON COUNTY—Texas Co., Wichita Falls, Perry 6, S 3, G. C. & S. F. sur, 2766 ft from w and 330 ft from N line.

WICHITA COUNTY—Jno. O'Neil, Wichita Falls, Carl 1, S 46, C. R. V. L. sur, 150 ft from e and 450 ft from s line. H. Hobbs, Wichita Falls, Watkins 2, H. B. Balch sur, 300 ft n of No. 1. Vergate Oil Co., Tulsa, Kemp 11, S 4, blk 58, A. Roesh sur, 300 ft no of No. 10. J. B. Duncan, Wichita Falls, Jackson 3, blk 2, D. C. S. L. sur, 750 ft from n and 150 ft from e line. A. T. Wolfe, Wichita Falls, Ferguson 1, blk 12, J. T. Lewis sur, 150 ft from s and e lines. McClure & Sons, Iowa Park, Fee 2, S 5, blk 5, G. C. & S. F. sur, 150 ft from s and e lines. Consolidated Oil Co., Wichita Falls, Waggoner 1, S 35, blk 5, H. & T. C. sur, 150 ft from s and e lines. Geo. L. Pace, Wichita Falls, Overby 1, blk 22, T. C. S. L. sur, 150 ft from s and w lines. W. H. Hammon, Wichita Falls, McCarty 1, W. R. Eanes sur, 150 ft from s and e lines. Magnolia, Dallas, Reilly 137, J. E. Ellis sur, 500 ft n of No. 134.

WILBARGER COUNTY — Texas Co., Wichita Falls, Waggoner B4, S 17, blk 4, H. & T. C. Sur, 210 ft from n and 225 ft from w line; C1, S 25, blk 4, H. & T. C. sur, 205 ft from s and e lines. E. B. Lawson, Nowata, Okla., Waggoner Est., 1A, S 25, blk 4, H. & T. C. sur, 200 ft from s and e lines. Waggoner Ref. Co., Inc., Electra, Waggoner E1, S 30, blk 4, H. & T. C. sur, 152 ft from w and 162 ft from s line. Murchison Oil Co., Wichita Falls, Waggoner 1, S 3, S. P. Ry sur, 150 ft from n and e lines.

WEBB COUNTY—F. J. Bates, Fort Worth, Bruni 1, blk 47, Las Albercas sur, 150 ft from s and e lines. Houston Oil Co., Houston, Cuellar 1, No. 1 Cuellar sur, 3300 ft from sw and 2324 ft from se line.

WHARTON COUNTY—Ingram Prospecting Co., Houston, Hounshell 1, J. Huff sur, 220 ft from w and 800 ft from n line. Geo. Hyde, Houston, Woytek 5, S. F. Austin sur, 551 ft from sw and 200 ft from se line. J. S. Abercrombie Co., Houston, Kostelnik 3, S. F. Austin sur, 30 ft from sw and 300 ft from se line.

WILLIAMSON COUNTY — Groneman & Wilder, Rockdale, Rheitmeyer 1, W. Cartwright sur, 150 ft w of center of e line.

WINKLER COUNTY — Dixie & Souther Crude Oil Pur. Co., Shreveport, La., Hendrick 3, S 35, blk B5, School sur, 660 ft e of No. 4; 4, same sur, center of blk 81.

WHEELER COUNTY—Marland Oil Co., Fort Worth, Bentley 2, S 42, blk 24, 330 ft from s and e lines.

YOUNG COUNTY—Atkinson & Sandefer, Breckenridge, Fort 3A, W. T. Carter sur, sw corner. J. D. Carpenter, Olney, Standham 1, 1996, T. E. & L. sur, 150 ft from n and w lines. Nash & Windfohr Oil Corp., Graham, Hinson 2, P. Pier sur, 375 ft w of No. 1. Continental Oil Co., Wichita Falls, Echelberger 1, 1449, T. E. & L. sur, 150 ft from s and e lines. Texas Co., Wichita Falls, Stowe 1, C. W. Junker sur, 450 ft from n and 900 ft from w line. W. A. Whatley, Graham, Matthews 1, S. Barnett sur, 300 ft from s and w lines. Peery, Moran & Woody, Wichita Falls, Stewart 8, D. Dawson sur, 300 ft e of No. 7.

LOUISIANA

BOSSIER PARISH—Autrey Oil Co., Houston, Snider 3, 22-19n-11w, 1970 ft s and 1220 ft e of nw c w½ ne. R. L. Crook, Shreveport, Larkin 9, 14-19n-11w, 150 ft n and 150 ft w of sec nw sw. O'Brien Brothers, Shreveport, Farrington 1, 21-23n-12w, 660 ft s and 660 ft w of nec.

CADDO PARISH—Bee Oil Co., Inc., Shreveport, Muslow 1, 29-20n-15w, 200 ft s and 200 ft w of nec. J. L. Ferguson, Waskom, Texas, Abney 1, 7-17n-16w, 1488 ft s and 400 ft e of nwc. Greenwood Prod. Co., Shreveport, Cooper & Ellerbee 1, 15-18n-14w, 2640 ft n and 1072 ft e of swc. Standard, Shreveport, W. P. Stiles et al 190, 27-21n-16w, 220 ft n and 200 ft w of sec ne sw. The Texas Co., Shreveport, Herndon 8, 14-21n-15w, 1040 ft e and 260 ft s of nwc sw; Herndon 9, 14-21n-15w, 990 ft s and 330 ft e of nwc of sw. Waterman Brick & Tile Co., Waskom, Texas, Waterman Lbr. Co. 1, 18-17n-16w, 150 ft s and 300 ft e of nwc of fractional sec 18.

CALCASIEU PARISH—Gulf, Houston, Industrial Lbr. Co. 9, 19-9s-12w, 100 ft e and 100 ft s of nwc E½ se.

CAMERON PARISH—Calcasieu Oil Co., Inc., Magnolia Pet. Co. and Union Sulphur Co., Houston, Olevia 1, 36-12s-10w, 2663 ft w and 158 ft n of sec. Yount-Lee Oil Co., Beaumont, State Land 6, 36-12s-10w, 517 ft e and 140 ft n of nwc lot 7, sec 36.

RAPIDES PARISH—Louisiana Pet. Corp., et al, Shreveport, Allen 1, 25-5n-1w, 275 ft n and 594 ft w of center.

RICHLAND PARISH—Southern Carbon Co., Monroe, Sartor 2, 20-16n-6e, 660 ft s and 660 ft e of nwc.

UNION PARISH—Carter & Goodwin, El Dorado, Ark., W. E. Clark 1, 7-23n-1e, 100 ft s and 200 ft w of sec ne ne.

ARKANSAS

NEVADA COUNTY — Wright Oil Co., Groves 3, 12-14-21, 480 ft w and 150 ft s of ne nw nw.

OUACHITA COUNTY — H. M. Harrell, Ponder A-1, 18-12-17, 238 ft n and 391 ft w of se c. Marine Oil Co., Hayes 8, owd, 4-16-15, 270 ft s and 150 ft w of ne c lot 3 in ne.

UNION COUNTY — Magnolia, Murphy 9, owd, 8-16-15, 300 ft e and 290 ft n of sw c. Ohio Oil Co., Pumphrey 1, 2-17-14, ne c se se.

CALIFORNIA

BREA-OLINDA—Brea Canyon Oil Co. 43, 1-3-10.

HUNTINGTON BEACH—Western, Ibbetson WE2, 10-6-11.

LONG BEACH—Calif. Pet. Corp., Shilling 4, 30-4-12. Crown City Oil Co. 2, 29-4-12. Pan American Pet. Co., Chainey 4, 30-4-12. Shell Co., Alamitos 28, 29-4-12; Alamitos 32, 29-4-12; Patton-Wilson 5, 29-4-12; Nesa 7, 29-4-12. Richfield Oil Co., Green 5, 29-4-12; Hass 15, 30-4-12. V. R. G. Wilbur, Borgstrom 2, 19-4-12. McKeon Drilling Co., Inc., Ellis 1, 30-4-12. Shell Co., Binkley 3, 29-4-12. General Pet. Co., Jonah 5, 19-4-12; K. & H. 8, 19-4-12; Clock 4, 19-4-12. Union Oil Co., LBC 16, 30-4-12. McKeon Drilling Co., Thorne 1, 30-4-12.

LOS ANGELES COUNTY—James Mayzie 1, 20-5-12.

MONTEBELLO—Standard Oil Co., Benedictine 2, 2-2-12.

SAN DIEGO COUNTY—Davenport O. & G. Dev. Co. 1, —12-2.

Winter Weather Stops Sweet Grass Work

Great Falls, Mont.—Continued bad weather in the Sweet Grass Arch territory has left the roads in such bad conditions that it has been impossible to transport material to location. Freezing temperatures have caused the shut down of all drilling wells. The operations in the Kevin-Sunburst field also have been brought to a standstill by the winter weather.

A wildcat test is to be drilled in Broadwater County, Montana, in the southwestern part of the state. Contract has been let by the Pierce-Poole interests. Location of the well is to be between Toston and Radersburg.

Citizens of Whitetail have raised $10,000 for a test of the structure near Plentywood. Structure is in Daniels County in the northwestern corner of the state, on a 47,000-acre block of leases which were obtained in less than two hours at a public meeting. The excitement about this test has been simmering along ever since an old water well was found full of oil; it is believed by the investors that the seepage into the well is coming through a fault opened by the recent earthquake.

WILDCATS FROM ALL SECTIONS

WEST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
CROCKETT COUNTY—		
Newman Oil Co., Clark 1	*	2108
GLASSCOCK COUNTY—		
The California Co., Currie 2	*	1613
JONES COUNTY—		
Sinclair & Stebbins O&G Co., Scott 1	*	2510
PECOS COUNTY—		
Douglas Oil Co. & Roxana, Sellman 1	*	1519
WINKLER COUNTY—		
R. S. Matthews et al, Cowden 1-A	*	4100

ANDREWS COUNTY — Amon Carter & Henry Zweifel's Cowden 1, elev 3156 ft, top salt 1575 ft, top lime 4150 ft, dr 470. ft. J. S. Cosden et al's Bedford-Ratliff 1, elev 3161 ft, top salt 1585 ft, sd 4116 ft. Calvin-Belt et al's Bedford-Ratliff 1, elev 3194 ft, top salt 1610 ft, co 2575 ft. Deep Rock Oil Co.'s W. J. Harris 1, elev 3173 ft, sd 1260 ft. C. B. McKennon et al's Means 1, elev 3137 ft, reset cas 1390 ft.

BORDEN COUNTY — Marland Oil Co.'s McDavid 1, dr 360 ft.

BREWSTER COUNTY — Van McPhail et al's McIntyre 1, sd 1057 ft. J. M. Hickey et al's Jackson-Harmon 1, sd 400 ft. Mid-Kansas O&G Co.'s Turney 1, dr 1785 ft. Reese & White's Kimball 1, ur cas 900 ft. Wilcox-Anderson's Gage 1, sd 1585 ft.

COKE COUNTY—Brown et al's Foster 1, sd 2250 ft. Danviger O&R Co.'s Byrne 1, sd 2835 ft. Lipan Oil Co.'s Conner 1, dr 2935 ft; Rawlings 1, dr by junk, 2736 ft.

CONCHO COUNTY — Exploration Co.'s Hartgrove 1-A, fsh 720 ft. Lawson & Parks' Schultz 1, dr 965 ft.

CRANE COUNTY — Crane County Dev. Co.'s Mosely-Brookfield 1, dr 460 ft. Duffey & Gault Brown's Cowden 1, elev 2537 ft, top salt 895 ft, top lime 2729 ft, trace oil 3030 ft, dr 3040 ft. Gulf's Waddell 3, dr 305 ft. E. L. Smith Oil Co.'s State Bank Fee 1, lcn. Texas Dev. Co.'s Cowden 1, top lime 2635 ft, sd 3860 ft.

CROCKETT COUNTY — Anderson et al's University 1, sd 2631 ft. Bolin & Co.'s Coates 1, sd 2110 ft. J. S. Cosden et al's Paul Perner 1, dr 490 ft. Corbett & Gill's University 1, elev 2437 ft, top salt 855 ft, dr 2055 ft. W. W. Donnelly & J. D. Young's Shannon 1, elev 2486 ft, sd making 1664-80 ft; Shannon 2, lcn; Massie 1-A, sp and sd; Todd 1, lcn. Gulf's Thompson 1, dr 205 ft. James Kelly et al's Todd 1, elev 2661 ft, top salt 993 ft, sd 2500 ft. C. A. Jones et al's Powell 1, top salt 1050 ft, dr 2355 ft. McMannon Oil Co.'s Blakeney 1, dr 3970 ft. Van McPhail et al's Thompson 1, rig. Osage Oil Corp. et al's Halff 1, skid rig. Bob Penn et al's Powell 1, elev 2759 ft, top salt 1065 ft, dr 1400 ft. Shaffer et al's Powell 2, sd 2635 ft. Simmons Oil Co. et al's Halff 1, top salt 445 ft, dr 550 ft. World Oil Co.'s Schneeman 1-B, sd 2310 ft.

CULBERSON COUNTY — Deep Rock Oil Co.'s T&P Fee 2, dr 1005 ft. J. H. Gardner et al's Radford 1, sd 610 ft.

JEFF DAVIS COUNTY — Humble O&R Co.'s C. Flores 1-A, dr 2565 ft. E. L. Smith Oil Co.'s Means 2, dr 2050 ft.

ECTOR COUNTY — J. S. Cosden & The Texas Co.'s Connell 5, elev 2843 ft, top salt 925 ft, dr 2005 ft.

FISHER COUNTY — Cranfill-Reynolds et al's J. A. Young 1, ur 1400 ft. The Texas Co.'s Dan Fisher 1-A, dr 2110 ft.

GARZA COUNTY—Gulf's Swenson 1-A, top salt 495 ft, dr 965 ft.

GAINES COUNTY—Westheimer & Daube's Forbes 1, ur 4660 ft.

TOM GREEN COUNTY—Cox et al's Llano Fee 1, sd 407 ft. Fitzgerald & Taliaferro's Bennett 1, sd 1625 ft. Haubelt et al's Johnson 1, dr 580 ft. Marland Oil Co.'s Johnson 1, dr 2275 ft; Johnson 1-A, dr 1170 ft. Tulsa Oil Co. et al's Adams 1, fsh 900 ft.

HOCKLEY COUNTY — World Oil Co.'s Ellwood 1, sd 1420 ft.

HOWARD COUNTY—Bristow & Merrick's Hooks 4, dr 1200 ft. The California Co.'s Fisher 1, elev 2623 ft, dr 2915 ft. Coyle-Concord Oil Co.'s Roberts 1, cmt cas 1588 ft; Roberts 2, sp and sd. Dixie Oil Co.'s Clay 1, sd 2222 ft. F-H-E Oil Co.'s Roberts, 2-A, showing oil, dr 1790 ft; Roberts 1-C, rig; Roberts 1-D, sp and sd. Godley O&G Co.'s Hooks 2, dr 1150 ft; Hooks 3, rig. Henshaw & Co.'s Settles 1, sd 1900 ft. Lee & Neely's Harry Hyman 1, dr 140 ft. Magnolia's G. O. Chalk 8, set cas 1290 ft; Kelly-Chalk 9, dr 445 ft; Mary-Chalk 8, ur 915 ft; Roberts 2, rig. Marland Oil Co.'s Clay 1-E, elev 2662 ft, show oil 3205-10 ft, dr 3250 ft; Clay 6-A, cmt cas 1800 ft; Clay 7-A, dr 1330 ft; Chalk 2-E, dr 1740 ft; Richardson 1, dr 810 ft. Marland & Texon's Connelly 1, sr 3887 ft. Marland-Zoch et al's Jones 1, dr 1145 ft. Mays-Nixon et al's Flowers 1, dk. Miley Oil Corp. & Marland's Read 1, rig. Owen-Sloan et al's Roberts 1, dr 1605 ft. Peer Oil Corp.'s Read 1, dr 3110 ft. Schermerhorn Oil Co.'s Roberts 1, dr 995 ft. Sprague Oil Co.'s Roberts 1, lcn. Sweeney & Henry's Chalk 2, rig; Chalk 3 and 4, lcns; Chalk 5, dr 945 ft. Vitek Oil Co.'s Clay 1, est 200 bbls oil after shot 120 qts 1650-1793 ft. Ward Oil Co.'s Roberts 1, sp and sd.

HUDSPETH COUNTY—Lockhart & Co.'s Moore 1, sd 900 ft; Gardner-Mosely 1, sd 260 ft.

IRION COUNTY—F. E. Webb et al's J. M. Nutt 1, machine.

JONES COUNTY—E. P. Campbell et al's Herndon 1, sd 3009 ft. R. F. Garland & Co.'s Glynn 1, sd 2430 ft. Gibson-Johnson et al's R. J. Camp 1, dr 1910 ft. Hutson & Weaver's Smith 1-A, sd 1980 ft. W. G. Stough et al's Bennett 1, sd 800 ft; Willis 1, sd 1740 ft. Swensondale Oil Co.'s Canton 1, dr 3030 ft.

KING COUNTY—Humble's Pitchfork 1, dr 2565 ft. Pattison et al's Patton 1, sd 2920 ft.

LOVING COUNTY—Lockhart & Co.'s Fee 1, lcn.

MENARD COUNTY — Carpenter & Robbins' Kothman 1, sd 415 ft.

NOLAN COUNTY — John H. Winemiller Corp.'s Arledge 1, dr 310 ft.

PECOS COUNTY — The California Co.'s Smith 4, dr 335 ft; Smith 5, sp; Smith 6 and 7, rig; Smith 8 and 9, lcns; Yates 2, rig; Yates 6, fsh 1107 ft; Yates 7, dr 1185 ft; Yates 8, ur 855 ft; Cummings et al's Blackstone-Slaughter 1, dr 1365 ft. Crude Oil Co.'s Pecos River 5, lcn; Pecos River 11, sp. Day Bros. & McKnight's Yates 1, elev 2213 ft, top salt 440 ft, sd 630 ft. Gibson Oil Corp.'s R. R. Russell 1, rig. Gulf Prod. Co.'s Smith 2, cmt cas 1215 ft; Smith 3, sp; Smith 4 and 5, machines; Yates 1, cmt cas 1254 ft; Yates 2, flow 30 bbls 28.5-degree gravity oil hourly, dr 1258-89 ft. George A. Henshaw & Co.'s Corder 1, lcn; Sweatt-Hinyard 1-A, elev 2770 ft, sd hfw 1452 ft. Humble O&R Co.'s Smith 4, dr 235 ft; Smith 5, rig; Smith 1-B, dr 290 ft; Smith 2-B, flowing 159 bbls hourly 1313-1422 ft; Smith 3-B, lcn. Kershaw & Livingston's Cannon 1, cellar dug. Kirby Pet. Co. & Edson Pet. Co.'s Tippet 1, top lime 1268 ft, flowing 30 bbls hourly 1293-1375 ft. Kirby & Roxana's Turney 1, sd 1189 ft. Robert Lee et al's Parker 1, lcn. Marland Oil Co.'s Yates 5-A, dr 705 ft; Yates 6-A, dr 860 ft; Yates 7-A, cmt cas 895 ft; Yates 8-A, dr 560 ft; Yates 9-A and 10-A, rigs. McMan O&G Co.'s Tippett 1, rig. McMan & Marland Oil Co.'s Yates 11, dr 830 ft; Yates 12, fsh 200 ft; Yates 13 and 14, machines. Mazda & Savoy's Smith 1, lcn. Mid-Kansas O&G Co.'s Pryor 1, machine. Mid-Kansas & Transcontinental's Smith-Taylor 4, dr 690 ft; Smith-Taylor 5, dr 500 ft; Smith-Taylor 6, sd 435 ft; Smith-Taylor 7, 8 and 9, lcns; Yates 8-A, dr 350 ft; Yates 9-A, making 120 and spray oil, dr 980 ft; Yates 10-A, machine; Yates 11-A, dr 200 ft; Yates 12-A to 16-A, machines; Yates 7-B, dr 755 ft; Yates 8-B, dr 935 ft; Yates 10-B, lcn; Yates 11-B, cellar dug; Yates 12-B lcn; Yates 13-B, dr 150 ft; Yates 14-B, dr 165 ft; Yates 15-B, dr 585 ft; Yates 16-B, dr 165 ft; Yates 17-B to 22-B, lcns; Yates 4-C, rig; Yates 7-C, dr 385 ft; Yates 6-C to 10-C, cellars dug; Yates 2-D, machine; Yates 1-E, dr 780 ft. Moody Corp.'s Corder 1, lcn. Olean Pet. Co.'s Harral 1, sd hfw 2995 ft. Red Bank Oil Co.'s Smith 2, sd flow 30 bbls hourly 1515-57 ft. Roxana Pet. Corp.'s Smith 2, dr 1115 ft; Smith 3, lcn; Tippett 3, flowing by heads, dr 1525-50 ft; Tippett 4, machine. Simms Oil Co.'s Smith 3, flowed 413 bbls first half hour 1187-97 ft; Smith 4, dr 655 ft. B. J. Spikes et al's Brown 1, machine. Transcontinental's Blackstone et al, 1, elev 3539 ft, dr 3195 ft. World Oil Co.'s Serf 1, rig.

REAGAN COUNTY — Camp & Henshaw's University 1, elev 2772 ft, top salt 1130 ft, fsh 2075 ft. Skelly Oil Co.'s University 1, elev 2895 ft, top salt 1340 ft, dr 2250 ft. J. T. White et al's Shafner-Sterling 1, sd 675 ft.

REEVES COUNTY—The Exploration Co.'s Kinney 1, show oil 1105-10 ft, dr 1145 ft. D. R. Thompson et al's Eddins 1, dr 3585 ft. Grisham-Hunter Corp.'s Rathage-Conner 1, machine. World Oil Co.'s Duff 1-A, sd 4514 ft.

RUNNELS COUNTY — Empire G. & F. Co.'s Clay 1, set cas 1170 ft. Gibson-Johnson's Harris 1, lcn; Serratt 1, rig. Kenwood Oil Co.'s Talley 1, sd 1720 ft. Noble O&G Co. et al's Sims 1, dr up lugs 2830 ft. Henry B. May et al's Schneider 1, elev 1666 ft, fsh 1070 ft. Miles Oil Co.'s Lawhon 1, dr 2260 ft; Charles Ray 1, dk. Royal Pet. Co.'s Willingham 1, lcn. Swensondale Oil Co.'s Werner 1, elev 1803 ft, dr 1730 ft. Owenwood Oil Corp.'s Fowler 1, lcn. Watchorn O&G Co.'s J. L. King 1, sp.

SCHLEICHER COUNTY — Thos. Gray et al's Robinson 1, ur 3004 ft.

STONEWALL COUNTY — Peer Oil Corp. & Producers Oil Co.'s R. P. Morrow 1, dr 3015 ft.

TAYLOR COUNTY — A. J. Brown Prod. Co.'s Henslee 1-A, elev 2010 ft, dr by lugs 2265 ft. Owen-Sloan et al's Latimer 1, sd 2605 ft. Roeser-Pendleton Inc.'s Sam Butman 1, dr 2765 ft. Gilbert Johnson & Dyar Bros.' Brown 1, dr 665 ft.

TERRELL COUNTY—W. W. Donnelly & Snowden-McSweeney's Proesser 1, lcn. Deep Rock Oil Co.'s Noelke 1, rig. Milham Explo. Co.'s Bassett 1, dk.

UPTON COUNTY — Mark Curtis et al's Giddings 2, dr 586 ft. Southern Crdue's Hobbs 1, elev 2510 ft, top salt 535 ft, dr 1665 ft. The Texas Co.'s Cordova Union 1, sec 23, elev 2576 ft, top salt 580 ft, top lime 1948 ft, swab 60 bbls oil 2098-2271 ft.

VAL VERDE COUNTY—Douglas Oil Co.'s Sellars 1, dr 4105 ft. Magnolia Pet. Co.'s Whitehead 1, dr 5195 ft. O. O. Owens et al's Henry Mills 1, dr 2895 ft.

WARD COUNTY—Stivers & Kissler's Dooley 1, lcn.

WINKLER COUNTY—Amerada Pet. Corp.'s J. B. Walton 1, elev 2833 ft, top salt 1086 ft, dr cmt plug 2334 ft. Atlantic Oil Prod. Co.'s Grisham-Hunter 2, sr 2535 ft; Grisham-Hunter 1-C, dr 2275 ft; Grisham-Hunter 1-E, sd 1192 ft; Hendricks 1, dr with hfo 2835 ft; Hendricks 1-D, cmt cas 2559 ft. Arizona Mining & Eng. Co.'s Hendricks 1, sp and sd. V. T. Bolin & Co.'s Brown 1, sp and sd. The California Co. & Cranfill Bros. Oil Co.'s Bashara 1, elev 2983 ft, trace oil, dr 3350 ft. Cranfill-Reynolds' Hendricks 2-A, flowed 1,500 bbls natural 2850-2983 ft; Grisham-Hunter 1-B, dr 2360 ft. Eastland Oil Co.'s Hendricks 1, dr 2505 ft. Gulf Prod. Co.'s Hendricks 2, rig;

Drilling Continues Active In Oregon Basin Field

Cody, Wyo. — In spite of winter weather, operations in the new Oregon Basin field are going forward with much energy. Power for the drilling is furnished by the Oil Fields Power Company's high tension electric line. There is no doubt but that there will be an extensive campaign by many interests in this field in the spring. First completion to be expected will be that of the Cody Petroleum Company, Klindt 1, northwest of section 7-51n-100w which is now drilling with rotary machine below 3200 feet.

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Springfield Gas Light Co.
Tennessee Copper Co.
Chestnut & Smith Corp.
Globe Gasoline Co.
Tri State Zinc Co.
Lago Petroleum Corp.
North American Trading & Import Co., Inc.
Hartford City Gas Light Co.
British Oil Refineries, Ltd.
Sir W. G. Armstrong-Whitworth & Co., Ltd.
Humble Oil & Refining Co.
Venezuela Gulf Oil Co.
Anglo-Chilean Consolidated Nitrate Corp.
Texas Pipe Line Co.
E. I. DuPont De Nemours & Co.
Roxana Petroleum Corp.
Houston Gas & Fuel Co.
Westchester Lighting Co.
Sinclair Oil & Gas Co.
Granby Consolidated Mining, Smelting & Power Co., Ltd.
Caribbean Petroleum Co.
St. Joseph Lead Co.
Midwest Refining Co.
Ely Calumet Mining Co.
Marland Refining Co.
Ranney Oil Mining Co.
Andes Copper Co.
Pan American Petroleum & Transport Co.
Golden Rod Mining & Smelting Co.
Andian National Corp., Ltd.
Oklahoma Northern Utilities Co.
Miami Copper Co.
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Vacuum Oil Co.
Bucyrus Co.
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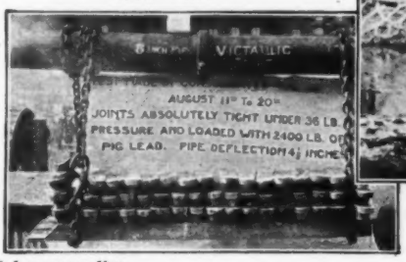
8" pipe test
Consolidated Gas Company of New York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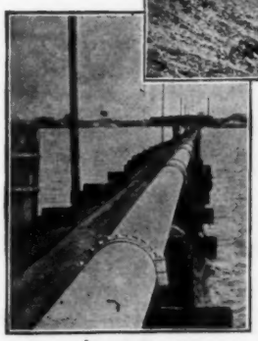

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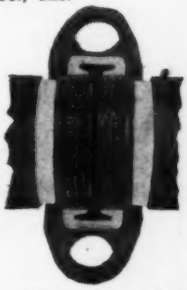

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Hendricks 3, flow by heads, dr 2866 ft; Hendricks 5, making ¶25 2779 ft; Hendricks 6, making gas, dr 2825 ft. Humble O&R Co.'s Grisham-Hunter 1, fighting big gas 2763 ft; Grisham-Hunter 3, fsh drill stem in big gas 2370 ft; Hendricks 1-B, dr 2685 ft; Hendricks 2-B, dk; Hendricks 3-B, dr 2505 ft. Independent O&G Co.'s Grisham-Hunter 2, dr 2770 ft; Grisham-Hunter 1-B, dr 860 ft; Grisham-Hunter 2-B and 3-B, dks; Hendricks 1-B, sec 44, sd with hfo at 2846-2940 ft. Landreth Prod. Corp. & Roxana's Hendricks 1-A, sd 3013 ft; Hendricks 2-Aand 3-A, dks; Hendricks 4-A, cmt cas 2587 ft; Liner Drilling Co.'s Campbell 1, sp and sd. Magnolia Pet. Co.'s Hendricks 1, elev 2713 ft, dr with oih at 2713-73 ft; Hendricks 2, top lime 2512 ft, dr plug 2519 ft; Hendricks 3, dr 850 ft; Hendricks 4 and 5, lcns. Murchison Oil Co. & Cranfill Bros. Oil Co.'s Grisham 2, 4 and 1-B, lcns; Grisham-Hunter 2-B, co 2890 ft; Grisham-Hunter 3-B, cmt cas 2427 ft; Grisham-Hunter 4-B, dr 2620 ft. Joe Maxwell and L. C. Turman's Hendricks 1, sd flow 70 bbls daily 2879 ft; Hendricks 2, top lime 2452 ft, cmt cas 2454 ft; Hendricks 3, dr 410 ft. Pure Oil Co.'s Grisham-Hunter 2, sd hfo at 2657-2770 ft; Grisham-Hunter 3, cmt cas 2360 ft; Grisham-Hunter 1-B, sec 34, sd making ¶40 and spray oil 2708-20 ft; Grisham-Hunter 2-B, cmt cas 2387 ft; Grisham-Hunter 3-B, cmt cas 2438 ft; Grisham-Hunter 4-B, lcn. Republic Prod. Co.'s Grisham-Hunter 1-A, sd making ¶15 gas 2775 ft; Grisham-Hunter 1-B, sec 41, cmt cas 2288 ft; Grisham-Hunter 2-B, dr 2205 ft. Roxana Pet. Corp.'s Grisham-Hunter 1-A, sec 45, sd spraying oil and gas, 2801 ft; Hendricks 1-B, sec 29, sd missed pay, td 3002 ft; Hendricks 1-D, dr 2355 ft; Hendricks 2-D, lcn. Sheldon & Burden's Hendricks 1, top salt 1260 ft, dr 1750 ft. Southern Crude & R. A. Westbrook et al's Grisham-Hunter 1-A-T-89, making ¶30 and spray oil after shot 300 qts at 2687 ft; 2-A-T-89, top salt 1189 ft, dr 1765 ft; 3-A-T-89, dr 650 ft; 4-A-T-89, lcn; Grisham-Hunter 2-B-T-88, sec 4, cmt cas 2659 ft; Hendricks 1-C-T-88, sec 28, making gas, dr 2850 ft; 2-C-T-88, cmt cas 2435 ft; 3-C-T-88, cmt cas 2499 ft; 4-C-T-88, dr 1035 ft; 5-C-T-88, dr 520 ft; 6-C-T-88, dr 580 ft; 7-C-T-88, dr 1025 ft. Southern Crude & Dixie Oil Co.'s Grisham-Hunter 1-A-T-68, dr hfo 2711 ft; 2-A-3-T-68, sd storage 2288 ft; 3-A-3-T-68, cmt cas 2118 ft; Hendricks 1-A-3-T-67, sec 4, sd 3072 ft; 2-A-3-T-67, sd storage 2646 ft; Hendricks 1-B-T-67, sd storage 2648 ft; Hendricks 4-C-T-67, flowing 200 bbls oil daily, dr 2934-90 ft; Hendricks 1-G-T-88, lcn; Hendricks 1-I-T-88, lcn; E. G. Hutchings 1-T-90, lcn. Texon Oil & Land Co.'s Grisham-Hunter 2-A, fsh tools in gas 2670 ft; 3-A, cmt cas and stdz 2140 ft; Grisham-Hunter 1-B, sec 45, sd 1150 ft; 2-B, sp and sd. White Eagle O&R Co. et al's Leck-Collins 1, elev 2830 ft, top lime 3155 ft, sd 3260 ft.

GULF COAST
Completions

Company, Well and Location		Initial Production Bbls.	Depth
FORT BEND COUNTY—			
Sun Oil Co., J. R. Farmer 3, Boling	*	2335	
AUSTIN COUNTY—			
T. F. Woods, Trenchman 1, 1½ mi w of Peters	*	1092	
WHARTON COUNTY—			
Imgram Prospecting Co., Mensing 1, Boling	*	861	

AUSTIN COUNTY—Humble's Gotosky 2, Raccoon Bend, dr 1082 ft hard sand rock; Wilson 1, Roccoon Bend, dr 702 ft, green sand. T. F. Woods' Trenchmann 1, 1½ miles w of Peters, abn 1092 ft.

BRAZORIA COUNTY—Roxana's Allen Pernard 1, Allen Dome, dr 5332 ft, hard shale, streaks of fine sand, no show; Allen 4, Allen Dome, hard sand and shale, dr 5385 ft, hard sand and shale; Randon 1, Allen Dome, dr 3648 ft, shale ,sand and lime; Bell 2, Clemens Dome, dr 4800 ft ,hard sandy lime. Danziger Oil Co., Bartlett 1, 3 miles w of West Columbia, lcn.

CHAMBERS COUNTY—Pure Oil Co.'s Lost River 1, Lost Lake Dome, set cas 1142 ft.

FORT BEND COUNTY—Sun Oil Co.'s J. R. Farmer 3, Boling, abn 2335 ft; J. R. Farmer 4, Boling, lcn.

HARRIS COUNTY—Dr. P. S. Griffith's Fee 2, 12 miles n of Houston, sd 3517 ft. Juanita Oil Co.'s Kitsman 1, 3 miles n of Cypress, td 1180 ft. Humble-Marland's Warren 2, Hockley, dr 2302 ft, shale and boulders.

JEFFERSON COUNTY — Deep Test Oil Co.'s McFaddin 1, 4 miles ne Spindle Top, sd 2170 ft. Southern Spindle Top Oil & Dev. Co.'s Young 1, sd 2510 ft.

LIBERTY COUNTY—Harrison Oil Co.'s Quintette 2, N. Dayton, temp abn 4602 ft. Judge Titwell et al's Gardner 1, sd 3510 ft. The Texas Co.'s Havard 1, Davis Hill, dr 3440 ft, gumbo. Barlow et al's Minchcliff 1, 2½ miles ne Cleveland, td 2211 ft gumbo and shale. Matagorda County Dev. Co.'s Hawkins 1, Bay City, sd 1988 ft.

WALLER COUNTY—J. R. Garrett et al's Garrett 1, 12 miles s of Hempstead, dr 970 ft, shale.

WHARTON COUNTY—Ingram Prospecting Co.'s Mensing 1, Boling, abn 830 ft; Hounshell 1, lcn. J. Huff sur, 220 ft from w and 800 ft from n line.

ECONOMY

Economy is now coming in for more consideration than ever before in the history of the production of crude oil. A new set of tubing and rods for a light producing well is more expense than some wells will bear. A set of our Sucker Rod Guides will double the life of tubing and rods. This logic is obvious to the thoughtful person with a pencil.

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MEXIA PLANING MILL CO.

Mexia, Texas

SOUTHWEST TEXAS
Completions

Company, Well and Location		Initial Production Bbls.	Depth
WEBB COUNTY—			
Houston Oil Co., Bruni 2-A	¶	50	2349
Cole Pet. Co., No. 5	*		....

CALDWELL COUNTY—United North & South Oil Co.'s Kelly 1, dr; Tiller 2, dr.

DUVAL COUNTY—Associated Oil Co.'s Sutherland 1, dr. O. W. Killiam's Lopez 3, 4, 5 and 6, dr. O'Hern & Seacord's Schlessinger 1, dr. Trussell, Cezeaux & Putman's Schlessinger 3, reported abn at 3006 ft.

JIM HOGG COUNTY—Andrews Pet. Co.'s M. S. Bank 1, dr; Palacious 1, dr. Bagger & Maddox's Nos. 1, 2, 3 and 4, survey 81, dr. Magnolia's Merchant State Bank 32, set cas 1232 ft. Miller Shaw's Jones 1, set surface cas. Moody Oil Corp.'s 1, blk 29, dr. Paesno Oil Co.'s Las Vivorcitas Grant 1, dr. Rycade-Rydal Oil Co.'s Lopez 4 and 5, dr. Simms Oil Co.'s Leyendecker 1, dr. A. & M. Stacy's 1, dr.

WEBB COUNTY—J. M. Basharaus' Espjo 1, dr. Cole Pet. Co.'s Benavides 36, fsh 5525 ft; No. 5, abn; No. 50-A, dr. Houston Oil Co.'s Benavides 1, dr; Bruni 2-A, prod 50 mil cu ft gas 2349 ft; Benavides 3, testing at 3008 ft. O. W. Killam's Puig 1, dr; Bruni 3, abn; Benavides 8, fsh 3965 ft. T. P. Morgan's No. 2, blk 23, section 335, dr. Nelson Drilling Co.'s Puig 1, dr. Newton Drilling Co.'s Bruni 2, dr. Rio Grande Oil Co.'s Santo Thomas Grant 1, dr.

ZAPATA COUNTY—Henne, Winch & Farris' Martinez 1, dr. Hill et al's Villa Grant 1, dr. O. W. Killiam's Lopez 1, testing at 1631 ft; Benavides 1, dr.

EAST TEXAS
Completions

Company, Well and Location		Initial Production Bbls.	Depth
HARRISON COUNTY—			
Magnolia, Trosper 2, J. H. Harrison sur	*	2905	

ANDERSON COUNTY — Brooks et al's Henby 1, Joseph Mertz sur, dk. Humble's Jones 1, Dan Roberts sur, dr bottom chalk 3218 ft; Spencer Clemens 3, Sessions sur, dr bottom Pecan Gap chalk 2989 ft. Pure Oil Co.'s Cook 1, A, Lewellen sur, dr 1510 ft.

CAMP COUNTY—J. C. Rogers' Boyd 1, R. M. Montgomery sur, rig.

CHEROKEE COUNTY — Humble's Ragsdale 3, N. Johnson sur, dr 3799 ft. Panhandle Oil Co.'s Whalen 1, J. Jordan sur, sd 550 ft. Woodmanse Synd.'s Hall 2, J. Durst sur, sd 800 ft. Joe Walter et al's Barns & De Loach 1, Perry Reese sur, set 12½-in at 62 ft.

HENDERSON COUNTY—W. K. Cayton et al's Hoffer & Nash 1, H. Jefferson sur, sd 2910 ft.

HARRISON COUNTY — J. R. Bahan's Hickman 3, E. Pollock sur, sd 2903 ft. Doney et al's Furrh 1, Joel Lipscomb sur, set 10-in at 105 ft. Ford et al's Furrh 1, E. M. Jenkins sur, arr to test 1004 ft. Magnolia's Anderson 1, J. Womack sur, wosr 2402 ft; Trosper 4, J. H. Harrison sur, dk. Mitchell et al's Jones 1, J. Lipscomb sur, set 10-in at 40 ft. Simms Oil Co.'s Abney 2, James Bryant sur, testing 1965 ft. State Line O. & G. Co.'s Abney 5, E. Little sur, dr 2640 ft; Mullins 2, T. D. Wilson sur, set 10-in at 40 ft. Tylong O. & G. Co.'s Vaughan 1, W. R. Anderson sur, rig. A. L. Waller's Bryson 2, W. R. Anderson sur, set 12½-in at 200 ft.

KAUFMAN COUNTY — Cranfield et al's Nicholson 1, A. Bennett sur, sd 3250 ft.

MARION COUNTY—William Gross' Baker 1, J. French sur, wosr 2391 ft. Lumberman's Oil Co.'s Bonham 1, R. Potter sur, set 10-in at 42 ft.

NACOGDOCHES COUNTY—Bluie et al's Griffin 1, J. W. Anderson sur, sd 23 ft. Stein & Lewis' Birdwell 1, Jose A. Chirino sur, sd 1100 ft. Union Sulphur Co.'s Whitermark 1, Jose A. Chirino sur, r 1999 ft.

PANOLA COUNTY—Bethany O. & G. Co.'s Richardson 3, J. Yarneyy sur, dk. Magnolia's Jernigan 2, Jane Thorpe sur, rig; Fltcher 1, B. C. Jordan sur, coring 2025 ft. S. Davenport 2, Jesssee Dunlop sur, tested show oil and sw 2390 ft; Steele 12, B. C. Jordan sur, set 13⅜-in at 152 ft; Trosper 1, J. Shandoin sur, cmtd bottom of hole 1987 ft. D. Thomasson's Crenshaw 1, J. Womack sur, arr to test 2340 ft.

RUSK COUNTY—C. M. Joiner's Bradford 1, K. Ximines sur, fsh 1100 ft. Magnolia's

Durren 1, Agulla Norris sur, dk. McCurrie et al's Sparks 1, Jessee Coarse sur, sd 2148 ft. Osborne et al's Matthews 1, D. Cortinas sur, sd 2330 ft. The Texas Co.'s Schultz 1, A. Loffton sur, dr 3112 ft.

SMITH COUNTY — Dr. Gaither et al's Parker 1, Don Thomas Quevedo sur, fsh 3251 ft.

SHELBY COUNTY—Magnolia's Pickering Lbr. Co. 1, Wm. J. Crane sur, dr 3105 ft. Wm. Sebastian's Pickering Lbr. Co. 1, T. F. Polly sur, arr to set cas for test at 2923 ft.

SABINE COUNTY—Crater Oil Co.'s Mills 2, Anthony Shoals sur, sdtr 3294 ft.

UPSHUR COUNTY — S. W. Richardson's Newsome 1, J. R. Davis sur, sd 2025 ft; Minor 1, A. Lowery sur, fsh 3500 ft.

LOUISIANA

Completions

LA SALLE PARISH—
Tunica Pet. Co., L. & A. 41, 5-7-2e * 757

SABINE PARISH—
Frazier et al, Harris 1, 29-10-12... * 3290
A. H. Tarver, Longe Bell 1, 5-8-13.. * 3503

BIENVILLE PARISH—E. J. Forrest's Perritt 1, 11-17-6, sd 2520 ft. Lake Bistineu Gas Co.'s State 1, 16-16-10, dr 1647 ft. Louisiana Pet. Co.'s Hays 1, 18-16-5, fsh 2326 ft.

BOSSIER PARISH—Bahan & Davis' Dodson 1, 15-23-12, set 6-in at 3084 ft. R. L. Crook's Larkin 8, 14-19-11, wosr 396 ft. Doern et al's Bollinger 1, 9-22-11, dr 2980 ft. H. S. Goodwin Tr's Curtis 1, 2-16-13, set 6-in at 2497 ft. Hamiter et al's Hamiter 1, 10-23-13, rig. Humble's B. & W. 30, 15-19-11, sd 4531 ft. Magnolia's G. W. Roberson 1, 26-23-12, set 10¾-in at 807 ft. J. C. McCullough Tr's Hodges 4, 25-16-12, set 6-in at 1568 ft. O'Brien Bros.' Dodson 1, 22-23-12, set 6-in at 3084 ft. R. O. Roy's Werner 1, 7-17-11, dk. Sligo Synd.'s Smith 2, 24-17-12, set 4½-in at 1706 ft. Sales & Walker's Bollinger 3, 30-23-11, wosr 3091 ft. Walker et al's Antrim 1, 28-23-12, sd 2260 ft. Woodley & Collins' L. & A. 3, 15-23-12, testing 3087 ft.

CADDO PARISH—Arkansas Fuel Oil Co.'s Lane 1, 13-21-15, dr 3950 ft; Lane 2, 13-21-15, sd 3865 ft. Belchic & Laskey's P. A. Sharp 3, 11-18-16, set 10-in at 42 ft. W. H. Cross State Line Hunting & Fishing Club ¶1 17-17-16, set 8¼-in at 930 ft. Bussa & McGoldrick's Bickham 7, 28-21-15, wosr 1603 ft. J. W. Burton Tr's Caldwell 8, 18-21-15, dk. Dixie Oil Co.'s C. M. L. 9, 23-21-15, arr to test 3909 ft; Clark 9, 14-21-15, dr 3060 ft; Robertshaw 89, 14-21-15, dr deeper 3997 ft; Robertshaw 91, 14-21-15, dk; Robertshaw 92, 13-21-15, set 15½-in at1 59 ft; Huckaby 4, 11-21-15, dr 2742 ft. Falcon Drlg. Co.'s Schmidt 1, 27-20-15, wosr 2292 ft. T. D. Gray et al's Hart 1, 29-21-16, wosr 2393 ft. Greenwood Prod. Co.'s Cooper & Ellrbe 1, 15-18-14, set 12½-in at 139 ft. Haynes Bros.' Spell 1, 15-21-15, r 3702 ft; Spell 2, 15-21-15, sd 3092 ft. Magnolia Pet. Co.'s M. Bell 2, 4-17-16, lcn; W. M. Bell 2, 6-17-16, dk; J. W. Furrh 1, 28-18-16, sd 1998 ft; J. Furrh 1, 32-18-16, dr 2074 ft; Dillon 18, 24-21-15, dk; Dillon 21, 23-21-15, lcn; Robertshaw 21, 23-21-15, dr 3790 ft; Robertshaw 21, 23-21-15, dr 3790 ft; Robertshaw 22, 23-21-15, set 10¾-in at 2315 ft; Hampton A-9, 15-21-15, dr 3382 ft. Ohio Oil Co.'s Aaron B. Land Co.'s 1, 32-23-16, sd 1553 ft; Plum 1, 32-23-16, sd 1619 ft; Smith 25, 12-21-15, dr 5180 ft; Thompson 1, 32-23-16, dr 2663 ft. Palmer Corp.'s Selling 1, 17-21-14, dr 3914 ft. Shreveport Oil Corp.'s State 1, 23-21-16, dk; State 2, 27-21-15, sd 2400 ft. Simplex Oil Co.'s Thomas et al's 3, 15-20-15, wosr 2355 ft; Thomas et al's 4, 15-20-15, wosr 2208 ft. Standard Oil Co.'s Helpman 54, 16-21-16, set 6-in at 2291 ft. Superior Oil Co.'s Youree 6, 26-20-15, wosr 2301 ft. State Line O. & G. Co.'s Amerada-Sharp 1, 22-18-16, 22-18-16, set 6-in at 905 ft. Standish Oil Co.'s Jolly 1, 22-22-15, wosr 1055 ft. The Texas Co.'s C. M. L. 47, 23-21-15, sd 3657 ft; C. M. L. 50, 23-21-15, fsh 3041 ft; C. M. L. 51, 23-21-15, dr 3808 ft; Mabry 10, 15-21-15, dr 3767 ft; Herndon 7, 14-21-15, dk; Herndon 8, 14-21-15, rig; Herold 10, 14-21-15, dr 3688 ft; Raines 19, 15-21-15, arr to core 4025 ft; Noel B-14, 14-21-15, blowing 4 bbls oil 3050 ft. Tubbs et al's Hines 1, 16-14-16, dr 2005 ft. Woodley Pet. Co.'s Knight B-4, 2-15-12, dr 2310 ft. Woodley & Collins McVey A-1, 23-19-14, sd 2100 ft.

CALDWELL PARISH—Grayson Oil Co.s Crockett 1, 6-12-4, sd 2692 ft.

CATAHOULA PARISH — S. D. Hunter's

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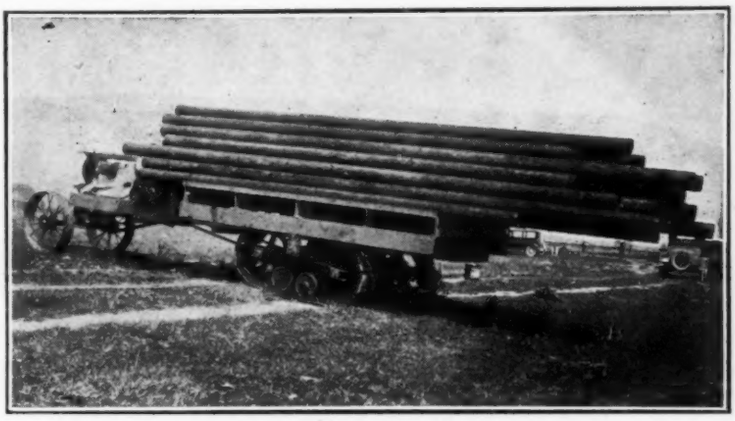
The Ohio Track Truck



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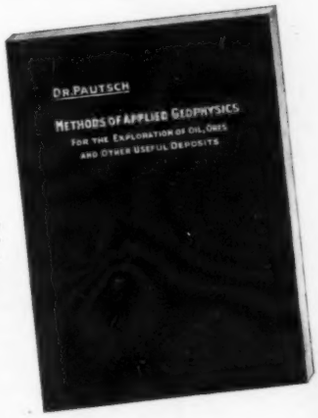

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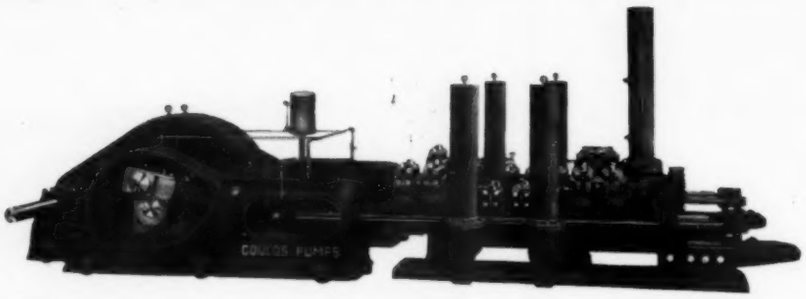
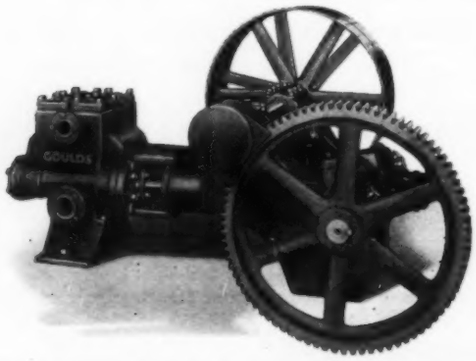


STATION PUMPS: Horizontal double-acting, outside packed plunger type, either duplex or triplex. Capacities up to 30,000 barrels per 24 hours. Pressures up to 1000 lbs. Complete specifications in Bulletin 115.

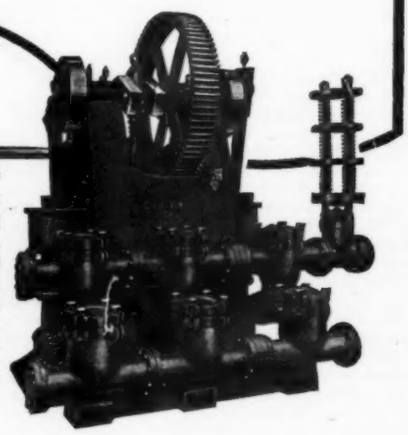


GATHERING PUMPS: Horizontal, double-acting, duplex piston packed types. Capacities 3100 to 6500 barrels per 24 hours. Pressures 400 to 600 lbs. Certain sizes are so designed that cylinder liners can be changed to increase or decrease the pump capacity in proportion to the pressure. Specifications in Bulletin 115.

Special Oil Pumps Bulletins

To provide accurate data showing the adaptability of Goulds Pumps for pumping oils, GOULDS PUMPS, INC., in collaboration with the Union Oil Co., conducted a series of tests in the Los Angeles Refinery of the above Company. The results of these tests are given in two reports by Prof. Robert L. Daugherty:

Bulletin 126. Investigation of the Performance of Centrifugal Pumps When Pumping Oils.



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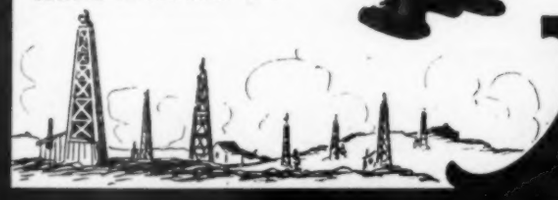
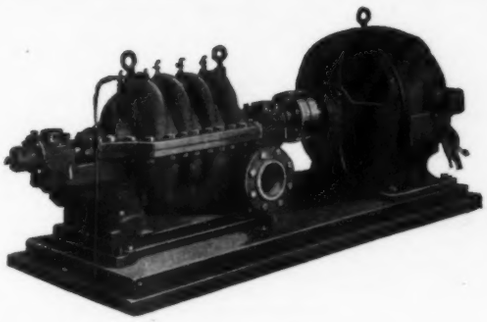
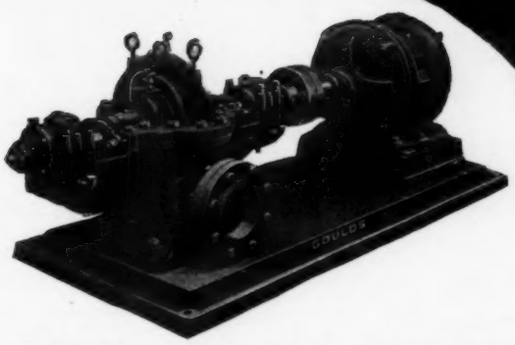


GOULDS

for the Oil Industry





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Bulletin 130. A Further Investigation of The Performance of Centrifugal Pumps When Pumping Oils.

"Petroleum Industry and Pumps Used," printed by Lefax, summarizes the uses for pumps for pipe line, refinery and natural gasoline plant services.

It is one of 14 Data Booklets issued by Goulds for distribution to engineers. Any of these booklets will be sent without charge, upon request.

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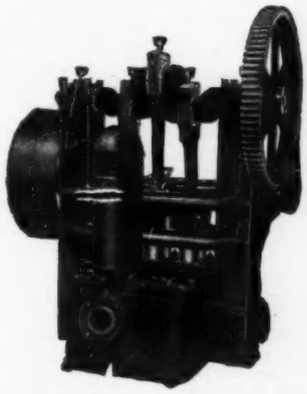
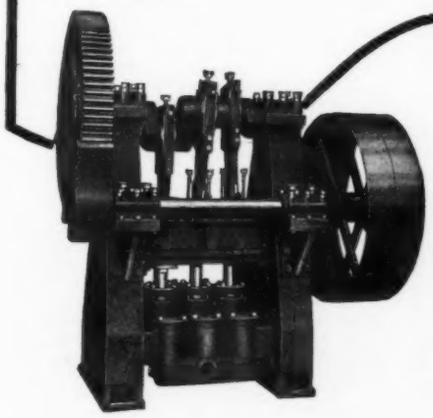
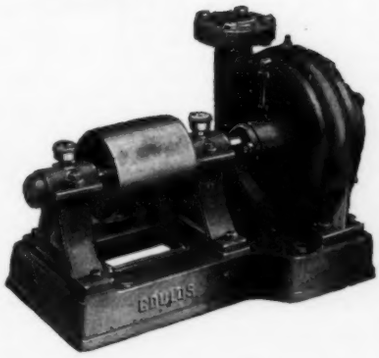


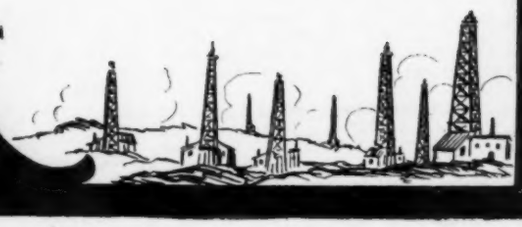


TRIPLEX PUMPS: For a great variety of uses such as: Gasoline and naphtha high and low pressure work—loading out — transfer service—handling ammonia — pumping wax —filter press service, etc. Specifications—Bulletins 100, 101, 103 104, 107 and 116.



Seneca Falls, N. Y.

PUMPS



Tensas Delta 2, 21-9-7e, dr 2484 ft. Lochnager et al's Beazley 2, 26-9-6e, cmtd bottom of hole 3318 ft. McMillan 1, 29-8-6e, tested dry at 1632 ft. Standard's Tensas 1, 23-8-5e, dr 1414 ft.

CLAIBORNE PARISH — El Dorado Chief Oil Co.'s Jones 1, 8-20-6e, dk. Magnolia's Lee 1, 16-22-8, dr 4377 ft.

DE SOTO PARISH—American Controlled Oil Co.'s Lanier 1, 7-11-11, wosr 2735 ft; Lanier 2, 5-11-11, set 10-in at 110 ft. J. H. Askew Richardson 2, 25-13-11, dk; Benson Oil Co.'s Wolf 1, 3-10-13, dr 1945 ft. Chal Daniels Frost Johnson 1, 1-11-16, sd 100 ft. Dixie Oil Co.'s Jenkins 1, 9-12-11, dr 5783 ft. Foster et al's Johnson 1, 7-10-12, set 10-in at 107 ft. Hazlett-Simmons Neely 2, 1-14-12, sd 600 ft. Magnolia's Logan 1, 17-10-12, cleaning out 3265 ft. Reliance Drlg. Co.'s Jones 1, 8-11-14, sd 2815 ft. Wingfield et al's Haygood 1, 18-10-12, sd 2400 ft.

FRANKLIN PARISH—Barbour Oil Co.'s Baker 1, 3-15-7e, sd 2884 ft. T. R. Cowell's Moore 3, 12-11-6e, coring 2000 ft. La. Pet. Co.'s Tensas 1, 11-11-6e, set 10-in at 200 ft.

GRANT PARISH—W. D. Ball et al's Calhoun 1, 4-7-4w, rig. Swope et al's Fee 3, 18-9-1e, sd 1607 ft; Fee 5, 18-9-1e, dk.

LA SALLE PARISH — Pima Oil Co.'s Urania 10, 7-10-2e, set 6-in at 1530 ft. Wingfield et al's Gibson 2, 2-9-1e, sd 3073 ft. G. W. Zoder's Urania 6, 7-10-2e, wosr 1516 ft.

MADISON PARISH—W. S. Smith's Yerger 1, 51-16-4e, arr to deepen 1700 ft.

MOREHOUSE PARISH — Keisker et al's Bonita Lbr. Co.'s 1, 10-23-9e, dk. Nat. Gas Prod. Co.'s Tensas Delta 10, 27-22-4e, sd 2250 ft. The Texas Co.'s Silvey 1, 22-20-6e, fsh drill stem 3821 ft. United Carbon Co.'s Atkins 1, 26-20-5e, dk.

NATCHITOCHES PARISH — Lawson & Pharris' Dave Delrie 1, 18-5-5, set 10-in at 40 ft. Tate et al's Leopole 1, 4-10-10, lcn.

OUACHITA PARISH—Industrial G. & D. Co.'s McGee 1, 3-18-4e, set 6-in at 2169 ft. Jordan Drlg Co.'s Miller 1, 18-18-5e, dr 2135 ft. Louisiana Dev. Co.'s Fee 45, 20-20-5e, set 6-in at 2173 ft. Ouachita Nat. Gas Co.'s D'Arbonne 2-A, 34-19-3e, set 6-in at 2167 ft. Smith 7, 38-20-4e, set 12-in at 297 ft. Peerless Co.'s Moore 3, 49-20-4e, lcn. Southern Carbon Co.'s Fairbanks 8, 38-19-4e, set 8-in at 810 ft. W. Va. O. & G. Co.'s Fee 5, 5-18-4e, dr 50 ft.

RAPIDES PARISH—Collins Bros.' Allen 1, 25-5-1w, dr 450 ft.

RICHLAND PARISH—Gulf's Wayne L. & T. Co. 2, 23-16-5e, set 6⅝-in at 2300 ft; Millsap 1, 8-17-6e, set 15½-in at 120 ft. Rhymes 3, 28-17-16, lcn. Helm et al's Tensas 1, 10-14-5e, sd 22 ft. La. Pet. Co.'s Binion 1, 22-17-6e, sd 2474 ft. Moody & Seagraves Osborne 1, 14-15-5e, dr 162 ft; McCoy 2, 30-16-6e, set 6-in at 2302 ft; Noble 1, 6-16-5e, set 15-in at 146 ft; McClanahan 1, 36-16-5e, set 6-in at 2296 ft; Hatch 1, 34-16-5e, lcn; Hemler B-1, 20-16-6e (formerly W. C. Feazel), dr 2115 ft; Hemler B-2 (formerly W. C. Feazel), set 12-in at 199 ft. Nat. G. & F. Corpn.'s Sortor A-1, 9-16-6e, set 12½-in at 900 ft; Sortor B-2, 19-16-6e, set 10-in at 905 ft; Sortor B-3, 19-16-6e, lcn; Sortor B-4, 19-16-6e, lcn; Thompson A-1, 21-16-6e, lcn. Oliver et al's Hatch 1, 2-15-5e, pumping in mud 2316 ft. Roxana's Tensas 2, 1-14-5e, arr to set 6¼-in at 2396 ft. Standard Drlg. Co.'s Delta H. L. Co. 1, 22-16-7e, dr 2786 ft. Southern Carbon Co.'s Sortor 1, 20-16-6e, set 12½-in at 137 ft. Stovall Drlg. Co.'s Dunning 1, 26-16-6e, set 12-in at 176 ft. Woodley Pet. Co.'s Hemler 1, 31-18-7e, testing 2478 ft.

SABINE PARISH—Arkansas Fuel Oil Co.'s Logan A-1, 23-10-12, cleaning out 4258 ft; Logan 10, 32-10-12, sd 3980 ft; Logan 11, 33-10-12, dr 3102 ft. S. P. Bordem Tr.'s Logan 1, 36-10-13, set 10-in at 107 ft. Dixie Oil Co.'s Stringfield 1, 20-10-12, sd 80 ft. Emlete et al's Bowman Hicks 6, 8-7-12, sd 3710 ft; Bowman Hicks 7, 11-7-14, blg 3529 ft; Mansfield H. L. Co. 1, 15-7-14, lost hole 515 ft, skidding dk. blg 3529 ft; Mansfield H. L. Co. 1, 15-7-14, lost hole 515 ft, skidding dk. Longoria et al's Burkett 1, 9-9-13, dk. Magnolia Pet. Co.'s Rembert 2, 32-10-12, set 6⅝-in at 3180 ft. Moffitt et al's Moore 3, 5-9-12, set 6⅝-in at 3205 ft.

UNION PARISH—Carter et al's Security Trust 1, 7-23-1e, sd 2257 ft. Camette et al's Tugwell 1, 21-22-1e, sd 2112 ft. Interstate Nat. Gas Co.'s Parks 1, 32-20-3e, rig moved, dk; Stephenson 1, 6-21-4e, lcn; Steele 1, 36-20-3e, set 6-in at 2107 ft. Southern Carbon Co.'s Harris 1, 20-20-4e, dr 2154 ft.

WEBSTER PARISH—Humble's Gray 1, 26-21-10, dr 3258 ft; Babb 5, 14-21-10, set 15½-in at 458 ft. S. A. Lanes Miles 1, 24-17-9, dr 1050 ft. Magnolia's Aarnes Cox 3, 22-21-10, dk; Haynesville Merc. Co.'s 1, 1-22-10, set 6⅝-in at 2577 ft; Marshall 5, 21-21-10, wosr 2526 ft; Nixon 1, 22-22-10, dk; Wise 1, 30-23-9, set 6⅝-in at 2706 ft; Cole 1, 27-21-10, r 2725; D. G. Cox 1, 22-21-10, changing rig 2715 ft; Newsome 1, 32-23-9, dr 1936 ft; Roseberry 1, 29-23-9, dk. Northwest La. Gas Co.'s Munn 1, 36-23-10, lcn. Ohio Oil Co.'s Holloway 4, 23-21-10, blg 4258 ft.

WINN PARISH—Ohio Oil Co.'s Rolen 1, 9-12-1w, sd 2149 ft; Edenborne 1, 31-10-4w, dr 2364 ft; Rolen Account 1, 5-12-1w, dr 2831 ft. H. M. Roarks Southern Mineral Co. 3, 19-11-3w, top rock sale 490 ft, sd 505 ft.

WEST CARROLL PARISH — Palmer Corp.'s White 1, 2-19-10e, set 12½-in at 200 ft. Phillips Pet. Co.'s Darnell 1, 32-20-9e, dr 2920 ft.

SOUTH LOUISIANA

CAMERON PARISH—Pure Oil Co.'s Sweet Lake 3, Sweet Lake, fsh 5897 ft; Sweet Lake 4, Sweet Lake, sd 5141 ft; Sweet Lake 5, Sweet Lake, sd 5140 ft. La. Land & Explo. Co.'s Calcasieu Lake A-1, Calcasieu Lake, surface cas set at 200 ft. Calcasieu Oil Co.'s Olevia 1, Hackberry, lcn.

JEFFERSON DAVIS PARISH — Estropal Oil Co.'s Le Doux 2, sd 2980 ft. John Carrodine et al's Walsh 1, Welsh, sd 1355 ft.

IBERIA PARISH—La. Land & Explo. Co.'s Vermillion Bay 2, about 26 miles sw of Franklin, off Cypremont Point, rig.

IBERVILLE PARISH—Roxana Pet. Corp.'s Wilbert 1, White Castle, dr 330 ft gravel. Union Sulphur Co.'s Wilbert 1, Atchafalaya, lcn; Schwing 1, Atchafalaya, lcn.

ST. MARTIN'S PARISH—Rycade O. Corp.'s Atchafalaya 1, fsh 3916 ft.

ST. MARY PARISH—Jacob Dannebaum's Viguerie 1, Grand Lake, lcn. La. Land & Explo. Co.'s West Cote Blanche 1, sd 2635 ft.

ARKANSAS

OUACHITA COUNTY—
The Texas Co.'s Davisson 1, 26-15-16 * 2755

BRADLEY COUNTY—Johnson & Adams' Southern Lbr. Co. 1, 12-12-12, sd 2204 ft.

CALHOUN COUNTY — Genther et al's Stout 1, 3-14-16, dr 2815 ft.

COLUMBIA COUNTY — Mitchell et al's Franks 1, 25-19-22, sd 150 ft. The Texas Co.'s Alexander 1, 8-17-19, dr 2775 ft.

DREW COUNTY—McClintock et al's Ogle 1, 35-13-5e, sd 2550 ft.

GRANT COUNTY—Jones et al's Meeks 1, 5-4-11, sd 1400 ft.

LAFAYETTE COUNTY — Ken-Saw Pet. Co.'s Kensaw 1, 31-19-24, sd 3100 ft.

LINCOLN COUNTY—Pine Prairie O. & G. Co.'s Carter 1, 33-10-6, sd 2176 ft.

LITTLE RIVER COUNTY—Grote et al's Allen 1, 2-13-31, sd 2941 ft.

MILLER COUNTY—Guess et al's Saunderson 1, 14-15-26, sd 896 ft. Lenge et al's Mann 1, 22-15-26, sd 2889 ft.

NEVADA COUNTY—Aines & Zingg's Womack 1, 10-14-21, wosr 1215 ft. Burnham et al's Kennedy 1, 9-14-21, wosr 1262 ft. Fruen et al's Rhodes 1, 22-12-21, sd 1515 ft. Humble's Groves B-4, 1-14-21, set 6-in at 1136 ft. McDonald's et al's Pell 1, 9-15-22, bld dry 1997 ft. J. J. O'Brien's Haynie A-5, 6-14-20, wosr 1204 ft; Haynie B-1, 6-14-20, wosr 1218 ft; Haynie B-5, 1-14-21, plugged back to 1163 ft; Moss A-14, 1-14-21, wosr 1160 ft; Moss A-15, 1-14-21, wosr 1170 ft; Moss A-17, 1-14-21, rig. Wright Oil Co.'s Groves 3, 12-14-21, set 10-in at 40 ft.

OUACHITA COUNTY — Buffalo Oil Co.'s Culp 1, 22-15-19, sd 2075 ft. Brewer et al's Curry 1, 32-15-19, wosr 2201 ft. Copenhagen et al's Berg 3, 13-15-17, sd 2193 ft. A. T. Grayson's Reynolds 1, 21-14-17, sd 1756 ft. H. M. Harrell's Ponder A-1, 18-12-17, set 10-in at 105 ft. Magnolia Pet. Co.'s Stout B-1, 28-14-16, dr 3075 ft. Marine Oil Co.'s Haynes 5-A, 4-16-15, lcn; Hayes 8, 4-16-15, coring 2635 ft. Phillips Pet. Co.'s Betty Joyce 19, 33-15-15, set 6-in at 2693 ft.

UNION COUNTY—Brown et al's Slaughter 1, 2-17-16, sd 2296 ft. Bondurant et al's Garner 1, 8-18-12, sd 2635 ft. Booth et al's Rowland 1, 8-17-11, dr 2715 ft. Garrett-Modisette Drlg. Co.'s Gregory 1, 10-17-14, set 6⅝-in at 2755 ft. Gulf's Murphy 45, 4-16-15, dk. Grimes Bros.' Williams 2, 8-18-14, set 10-in at 151 ft. Imperial O. & G. Co.'s Goodwin 1, 26-17-16, sd 3118 ft. E. M. Jones Crain 1, 2-17-14, flowing 3062 ft. W. R. Keever's Ezell 4, 12-17-15, bld dry 2156 ft; Ezell 5, 12-17-15, lcn. Keene & Wolfe's Murphy 6, 9-16-15, dk. Lion O. & R. Co.'s Horn 1, 17-17-15, dr 20 ft. Laurel O. & G. Co.'s Houston 1, 12-16-16, arr to deepen (depth not known) Lyell et al's Stegall 1, 11-17-15, sd 47 ft. Magna Prod. Co.'s Tatum 6, 7-16-15, arr to plug off and abn 2704 ft. Magnolia's Carroll 2, 1-17-14, sd 1500 ft; Crawford 3, 8-16-16, dk; Laney 3, 8-16-16, dk; Laney 4, 8-16-16, dk; Wilson 7, 17-16-15, tested sw 2350 ft. Mountze et al's Pratt 6, 8-18-15, sd 2146 ft. C. E. Murdock's Murphy 2, 17-16-15, arr to deepen with c t's 2754 ft. Murdock et al's Vestal 1, 17-16-15, sd 2561 ft. National Consolidated Pet. Corp.'s Fagg 1, 8-16-16, wosr 2643 ft. Nat. G. & F. Corp.'s Hill B-3, 5-16-15, lcn. J. J. O'Brien's Saxon 1, 16-16-16, tested sw 2659 ft. Ohio Oil Co.'s Crain 2, 1-17-14, ¶12 3020 ft; Crain 3, 1-17-14, dr 2535 ft; Crain 4, 1-17-14, lcn; Crain 5, 1-17-14, set 10-in at 326 ft; Pumphrey 1, 1-17-14, dr 2907 ft; R. Pumphrey 1, 2-17-14, dr 20 ft. Pitcher et al's Arkansas Timber Co. 1, 21-17-11, dr 1087 ft. Rice et al's Newton 1, 13-17-16, sd 3003 ft. Rovenger Oil Corp.'s Harrell 4, 15-17-16, dk. McCain 1, 4-17-14, set 4½-in at 3031 ft. Sun Oil Co.'s Hays 3, 3-16-15, sd 2275 ft. Standard's Murphy 24, 4-16-15, set .½-in at 2597 ft; Murphy 33, 4-18-15, arr to abn 2585 ft. Wingfield et al's Greer 1, 15-19-13, sd 50 ft.

MOUNTAIN STATES

NEW MEXICO

CURRY—Hasson Pet. Co., Laird 1, 22-8-36, spd and sd. Clovis O. & G. Co., Hoskinson 1, 21-3n-36, sd 3736 ft.

CHAVES—Gibson Oil Corp., Forsyth 1, 8-11-23, sd at 675 ft. Buffalo-Roswell 1, 24-11-27, sd at 4260 ft. Arena Oil Co., 1, 18-13s-31e, fsh tools at 750 ft. McQuigg Bros., Neis 1, 7-5s-29e, dr 725 ft.

GUADALUPE—Hanchett Oil Co., Rutherford 1, 23-8-24, dr below 4300 ft. Union Pet. Co., McMullen 1, 24-5n-16, installing heavy equipment, td 235 ft. Navajo Oil Co., Goard 1, 10-31-7, dr.

LEA—Midwest Ref. Co., Hobbs 1, dr 475 ft.

McKINLEY—Smart & Reid, 7-17-9, rig. Inland Oil Corp., 22-18-10, sd 783 ft. S. Dysart 1, 21-14-9, ur at 1495 ft. Continental Oil Co., Carrica 1, sw 9-17n-7w, dr 700 ft. Jenkins Oil Co., 1- 16n-9w, wtg cas 510 ft. Williams et al, 2, 30-18n-8w, stdg with hfw 860 ft. Reliance Oil Co., Valentine 1, 16-17-9, dr 920 ft. Producers & Ref. Corp., 1, 12-17-9, dr 1199 ft.

QUAY—Gibson Oil Corp., 1, 25-8-32, sd 3500 ft. Ohio Oil Co., Jordan Ridge 1, 24-7-29, dr 4366 ft.

SAN JUAN — Continental Oil Co., Munoz 17, 2-29-19, redr at 3777 ft. Portage O. & G. Co., 3, 25-31-13, sd at 1300 ft. Kansas-Colorado Oil Co., Atterberry 1, 24-31-11, sd 1850 ft. T C. N. Oil Co., Lanier 1, 9-29-11, sd 547 ft. Huntington Park Oil Co., 2, 29-30-9, set cas 4155 ft. R. M. Smith, Abrams 2, 23-29-11, stdg 532 ft. Huerfano Oil Co., Wiltbank 1, 25-29-11, stdg. Aztec Oil Co., Finch 1, 15-29-11, repairing equipt, td 650 ft. Senate Oil Co., Lanier 1, 34-29-11, dr 1837 ft. Union Oil & Mining Co., Pine 2, 8-29-9, oil showing, fsh td 2950 ft.

SOCORRO—Abo Oil Co., 1A, 14-3s-6e, set 12½-in 600 ft, sd to reorganize.

TORRANCE—Duran Dome Oil Co., 1, 31-2-14, dr 1533 ft. F.G. Wilson, Tr., Pace 1, 12-6n-27, crooked hole at 2215 ft. Bluhall O. & G. Co., 20-6n-10e, dr 450 ft. San Juan Pet., Randall 2, 26-6n-10e, dr 4764 ft.

VALENCIA—Acme Oil Co., 26-6-3, td 1962 ft., bldg stndrd rig. Stone, et al, 25-7-2, fag pipe at 1967 ft.

WYOMING

BIG HORN—Agate Oil Co., ne 13-51-92, dr. Utah Southern Oil Co., 3, 29-56n-97w, showing at 2250 ft. Wisconsin-Himes, 9-34-94w, dr 560 ft.

CARBON—Graybeal Synd., 16-28-91, coring

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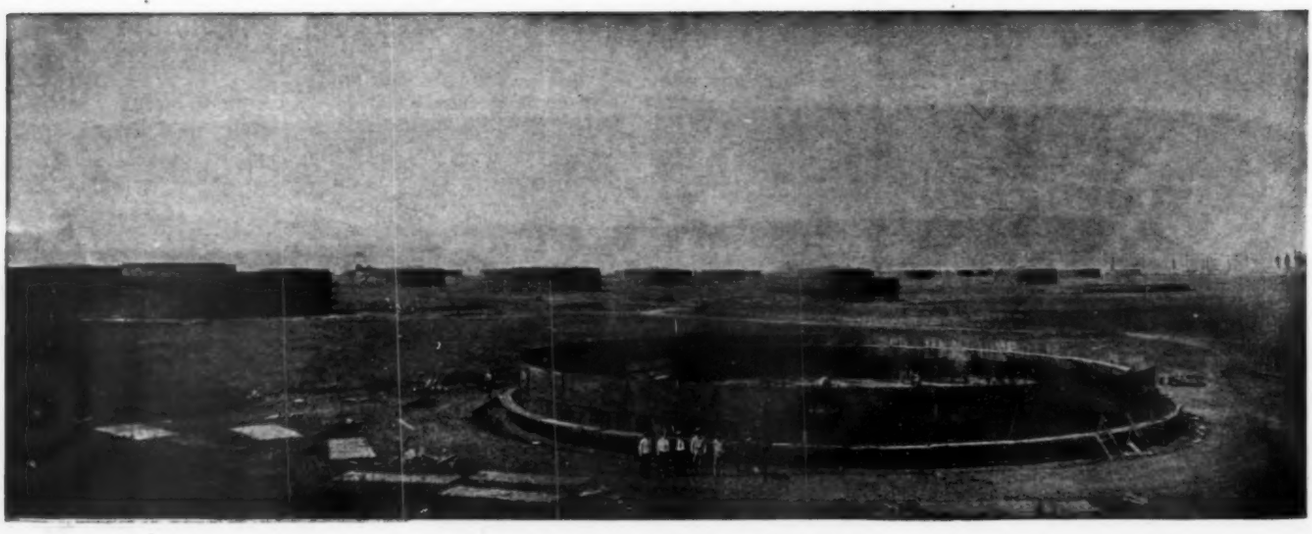

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CONVERSE—A. E. Tylee, ne 8-32-72, rig. Criterion Oil Co., Irvine 1, 5-31-70, coring below 3364. John Ackard, McKinley 1, 21-31-69, dr below 2750 ft.

FREMONT—Producers & Refiners, Muskrat 1, 34-34-92, run 12½-in at 1180 ft. Texas Prod. Co., Alkali Butte 1, 1-33-92, run 20-in to 58 ft. Zola Oil Co., Crook's Gap 1, 25-27n-93w, cas cmt at 3530 ft., dr ahead. Iowa-Wyoming Inv. Co., 30-1s-2e, attempting water shut off at 1500 ft.

JOHNSON—Fairway Oil Co., Crazy Woman 1, 7-47-82, at 2025 ft. Tarrant Synd. 2, 17-46n-82w, ur at 3625 ft. Murphy & Grove 10-41n-80w, dr below 900 ft.

NATRONA—North Casper Creek O. & G. Co., se 1-36-82, sd. Combs Inv. Co., 12-39-78, dr below 500 ft.

NIOBRARA — Penn-West. Pet. Co., 13-35n-62w, resuming at 800 ft. Hollingsworth Bros. 17-39-78, fsh tools at 1710 ft.

PARK—Union of Calif., Taylor 1, 22-47-101, dr 2745 ft. Fred G. Ostland, Hoodoo Ranch 1, dr 1540 ft. Honolulu Oil Corp., Four Bear 1, 29-48-03, dr 775 ft. Ralph Arnold & Charles Mau, Frannie structure, will drill old hole of Summit Oil Co. deeper from 1800 ft. Ydoc Oil Co., ne 6-51n-101w, dr 795 ft. Honolulu Oil Co., Pitchforck 1, 14-48n-102w, lcn Hoodoo Oil Co., 36-51-101 sp.

PLATTE—Walter Adams, Trustee, sec 13-25-66, dr 1700 ft.

SWEETWATER—Boar's Tusk Oil Co., 16-23-104, set cas and resumed below 1000 ft. Prairie O. & G. Co., Tucker 1, 18-13-99, sd for winter at 510 ft. P & R Marland of Colo., 26-20-104, dr 485 ft.

WASHASKIE—P. & R. Corp., Tensleep 1, 13-46-89, run 8¼-in at 3025 ft.

WESTON—Unknown persons, ne 15-44-64, dr 400 ft.

UNITA—Unita Oil & Dev. Co., in Evanston, dr below 840 ft.

MONTANA

CARBON—Ohio Oil Co., Northen Pacific 1, dr out cmt 2390 ft. Book et al, Moore 1, 13-17-23, wtg supplies, td 850 ft.

FERGUS—Melton Corp., Fenhold 1, 24-21-17, stropping at 2175 ft. Rowland et al, 1, 13-17-23e, sd.

FLATHEAD—Flathead Pet. Co., Reservation 1, se 35-23-22w, rig.

GLACIER—Rimrock Oil Co., 29-35-5w, rig up.

HILL—A. H. McFarland, sw 15-30-13e, sd at 100 ft. Gad-Hamilton et al, Goldstone, 1, sw 25-36-9e, rig. Equitable Oil Co., Perkins 1, 34-33-12e, ¶4 3330 ft.

LIBERTY—Chester Oils, Inc., Laird 1, 31-37n-6e, dr 2020 ft. Sunburst O. & R. Co., Disotell 1, 10-37n-5e, dr 2300 ft.

MUSSELSHELL — Manhattan Oil Co., ne 24-7-24e, sd 60 ft. McElwain Oil Dev. Assn. 2-11-22e, rig.

RICHLAND—Community Drlg. Co., Pioneer 1, rig to drill deeper from 2600 ft.

ROOSEVELT—Pioneer O. & G. Co., 1, se 35-27-51e, sd 1590 ft.

PONDERA—Mutual Drlg. Co., 5-27-3w, dr 1840 ft. S. C. Ferdig, et al, 8-27-4w, rig. Continental Dev. Co., sw 19-27-3w, dr below 600 ft.

PHILLIPS—Big Dome Oil Co., Bloomberg 1, ne ne 1-32-32e, set 12-in at 520 ft and dr ahead.

SWEETGRASS—Shoshone Consolidated, nw 23-2n-15w.

TETON—Drilling et al, ne 9-25-1e, fsh 1400 ft. Fidelity Oil Co., 1, 15-23-1e, sd 1350 ft. Bannatyne Oil Co., Eckelman 1, 29-26-1e, dr 1400 ft. Continental Dev. Co., Ritmoure 1, 8-27-5w, dr 900 ft. Elliot et al, Bannatyne 1, 19-26-1e, dr 1000 ft.

TOOLE—Kevin-Flathead Oil Co., 1, ne 27-36n-23, sd 2200 ft. Zenith McDonald, Lowey 1, 35-36n-1w, sd 2135 ft. Sunburst O. & G. Co., Grandview 1, 10-34n-3e, rig. Commonwealth Pet. Co., Benjamin 1, 22-31-2e, show at 2045 ft. Madeline Oil Co., Swanson 1, 33-35-4w, dr 550 ft.

COLORADO

BOULDER—Left Hand Oil Co., Prechtl 1, 34-3n-70, preparing to run 3-in pipe and packer. Essok Oil Co., Martin 1, 5-1s-70, ur to 5225 ft. Repelle Oil Co., Nichols 1, 32-1n-70w, dr 2200 ft.

FREMONT — Fremont Leasing & Holding Co., 1, 2-19-70, fsh. Columbia Oil Co., Sheridan 1, 20-18-70, sd at 2240 ft.

LAS ANIMAS—Parker Club, Inc., Adams 1, 32-34-55, dr 3675 ft. Foley & Goldsworthy, Government 1, 11-30-60, standing 2010 ft.

LA PLATA—Collins et al, Aspaas 1, 10-34n-11w, dr 800 ft.

MOFFAT—Ohio Oil Co., Kuykendall 1, 22-21n-11w, sd 2008 for winter. Reiter-Foster Oil Co., State 1, 16-12-100, showing oil 1989 ft. Yarg Prod. & Ref. Co., No. 205, 26-4n-92w, dr 200 ft.

MONTEZUMA—Coon & Cotton, Hall 1, 9-35n-13w, dr 560 ft.

RIO BLANCO—Texas Prod. Co., Freeman 1, 27-3-94, set 6½-in at 5010 ft. Argo Oil Co., sw 9-2s-96w, bldg camp.

ROUTT—Great West. Oil Co., State 1, 17-60n-86w, wtg cas at 1710 ft.

SAGUACHE—Cook, Weber, et al, State 1, 27-41n-10e, hole partly cleared, td 4300 ft.

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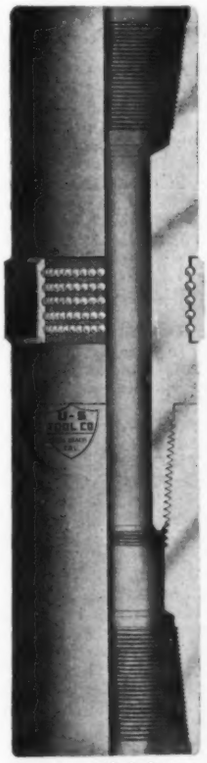
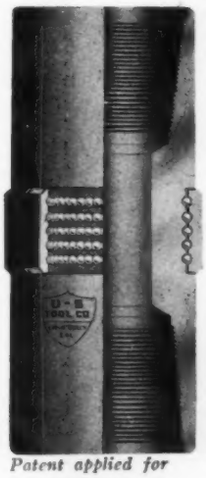
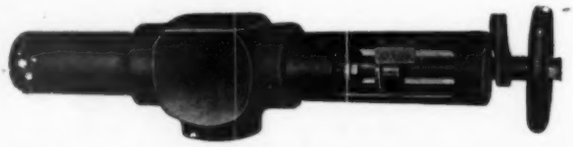


Patent applied for
U-S. Anti-Friction
TOOL JOINT



Patent applied for
U-S. Anti-Friction
DRILL PIPE COLLAR

U-S TOOL CO.
Manufacturers of Oil Well Tools
Long Beach California



Shaffer **Adjustable Flow Bean**

Conserves Gas and Oil
Promotes Production Economy

The Shaffer Adjustable Flow Bean is of dominant importance in the conservation and economical production of oil. It is simple in construction, positive in operation, and precisely controls the flow of gas and oil from a producing well, throttling it to the desired pressure and rate of flow without disturbing the oil or gas stream.

It promptly stops the waste of gas and oil, tremendously increases production and performs the important function of greatly prolonging the flow-life of the well.

Further information mailed on request

SHAFFER TOOL WORKS
Brea, California, U. S. A.
Distributed by
Robt. N. Atmore Co., Tulsa, Okla.
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Oil Well Supply Company,
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The Powerful Reschke Compound Eccentric-Geared Unit Pumper

For Wells 2000 to 4000 feet Deep

SAVE 40 PER CENT TO 60 PER CENT ON YOUR PUMPER INVESTMENT—Why tie up $4,000 in a standard rig pumper, when, at a fraction of this cost you can buy a Reschke Compound Eccentric-Geared Unit Pumper that will do the work?
SAVE HALF YOUR OPERATING COST—Why buy double the horse power, pay double the fuel and double the labor to pump on a crank, when with eccentric gears you can do the work for much less?
SAVE HALF YOUR SHUT-DOWNS—Why place undue fatigue and wear on the rods, cups, valves and working barrel with a crank stroke that makes your engine heave with every lift? Eccentric gears will give you a long stroke, with a slow stop and start, and with an astonishingly smooth pull on your engine.
With 15 H. P. you can pump a 4,000-foot well. This amazing power is due to several distinctive features of this compound eccentric gear movement. At the peak load these gears are in "low" and the gravity pull on the gears adds greatly to the power from the cylinder.
Write us today for a full explanation

The Reschke Machine Works Co., Wichita, Kansas.

SOUTHERN CALIFORNIA

BOYLE HEIGHTS—Haskell M. Greene's PASF 1, sd 2995 ft.

CLAREMONT—Claremont O. & G. Co.'s 1, sd 1130 ft.

DAVIDSON CITY—Califarnia Well Drilling Co.'s 1, dr 6930 ft.

DOMINGUEZ — Dominguez Extension Oil Co.'s 1, sd 5510 ft.

EL SEGUNDO—Rider Oil Synd.'s El Segundo 1, sd 2300 ft. Southern Calif. Drilling Co.'s Matteson 1, sd 4865 ft.

ESCONDIDO—Stanley S. Turner's Baler 1, rigging rotary.

FAIRVIEW—Pet. Securities Co.'s 1, dr 3410 ft.

GARDENA—Circle O. & G. Co.'s Pomeroy 1, sd 4130 ft.

HAWTHORNE—San Clemente Oil Co.'s Peck 1, will make production test 5535 ft.

HUNTINGTON BEACH—J. A. Brower's Bolsa Dome 1, dr 5000 ft. Calnan Pet. Corp.'s S. & W. 1, sd 5107 ft. Leo Stein's Huntington 1, dr 4707 ft.

INGLEWOOD—Alenson & Co.'s 1, sd 3500 ft. Hurst Oil Corp.'s Simons 1, sd 3740 ft.

LANCASTER—John B. Harding's La Loma 1, pulling 8¼-inch cas 820 ft.

MAYWOOD—Magnolia Pet. Synd.'s Tweedy 1, sd 4450 ft.

MONTEREY PARK—Monterey Park Pet. Co.'s Browning 1, dr conglomerate 2929 ft.

MONTEBELLO—Rotary Air Drill Co.'s Germain 1, sd 1400 ft.

NEWHALL—W. W. Stabler's Castaic 1, sd 3408 ft. Thomason & McCoy's S. F. Canyon 1, sd 1610 ft.

OLIVE—Standard's No. 1, dr hard sand 4816 ft.

ORANGE—Chas. A. Son's Pinkerton 1, dr 3577 ft.

PLACENTIA—Shell's Allec 1, dr 4941 ft.

PICO—Associated's Patterson 1, dr 2466 ft.

POTRERO—Associated's Cypress 1, dr in oil and brown shale 5217 ft.

PUENTE HILLS—Anchor Pet. Co.'s Hudson 1, sd 2215 ft.

SAN FERNANDO—Shell's Mission 1, coring 4586 ft, oil showings.

SAN JOSE HILLS—Bardeen Oil Co.'s Didier 3, sd 2260 ft. D. & B. Oil Co.'s Amar 1, plug 2600 ft, td 4380 ft, swabbing. Fuller & Gray's Sanchez 1, rig.

SAN JUAN CAPISTRANO—O. K. Carr's Forster 2, sd 4207 ft.

TELEGRAPH CANYON—Quadra Pet. Co.'s Kraemer 1, sdtr dr pipe 2975 ft.

YORBA—Standard's Y. L. W. 1, dr 4640 ft.

WATTS—Southwest Pet. Corp.'s Ramsaur 1, dr 4256 ft.

WATSON—White Behr Consolidated Oil Co.'s Watson 1, dr blue shale 2376 ft.

WEST COYOTE—Shell's Stern 1, dr 1414 ft.

RIVERSIDE COUNTY—Hemet Pet. Corp.'s 1, cmt 8¼-inch cas 1625 ft, td 1640 ft, good gas showing. Spindletop Oil Synd.'s Salton 1, dr 3155 ft. Trabuco Oil Co.'s 1, dr 2716 ft.

SAN BERNARDINO—Colton Terrace Oil Co.'s Colton 1, dr 1500 ft. Como Oil Co.'s Cajon 1, sd 2845 ft. Del Rosa Oil Co.'s 2, sd 915 ft. Hesperia O. & G. Co.'s 1A, sd 3315 ft. H. & P. Oil Co.'s Ranger 1, cmt 2144 ft. McCarty & Collier's McCarty 1, sd 1342 ft. Western Pacific Oil Co.'s 3, sd 3005 ft.

SON DIEGO COUNTY—Oceanside Oil Co.'s Dunn 1, sd 3210 ft. Southern Oil & Gas Co.'s Randall 1, will abn 2450 ft. Torrey Pines Oil Co.'s McGregor 1, sd 480 ft.

NORTHERN CALIFORNIA

Completions

ADOBE CANYON—
Calif. Pet. Corp., Glide 1, 25-27-28.. * 1100'

SONOMA COUNTY—
Shell Co., Murphy 1, 8-5-7 ..... * 6383

FRESNO COUNTY

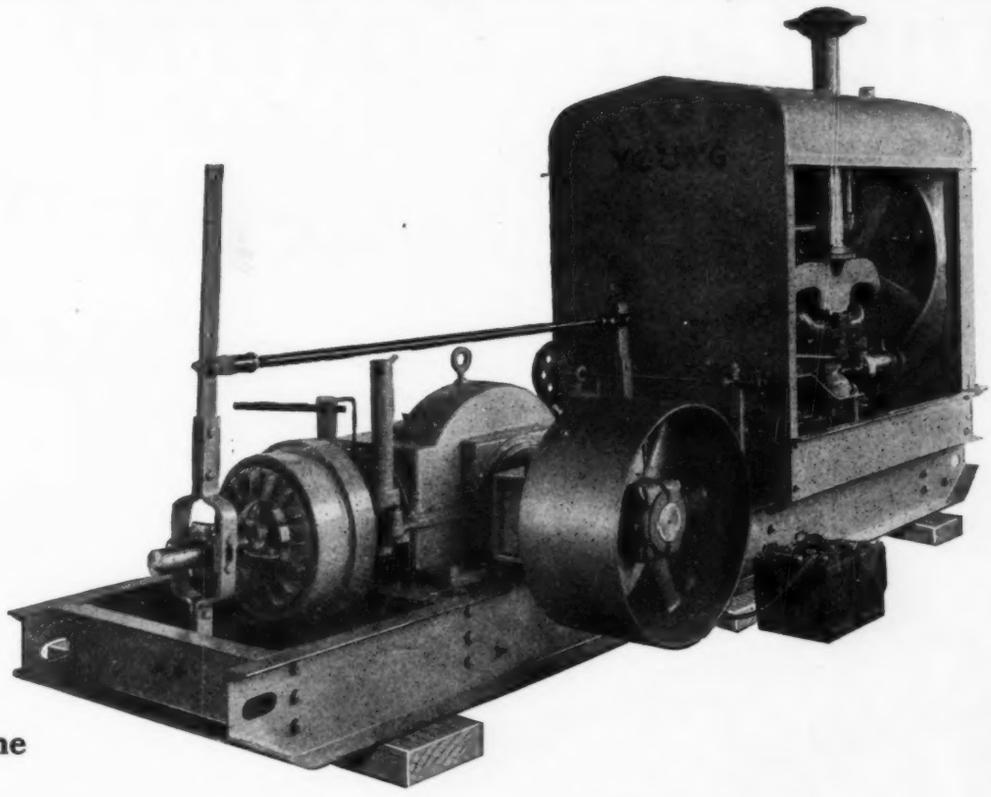
NORTH COALINGA—Superior Oil Co.'s Kennedy 1, 18-21-17, rig.

RAISIN CITY—Fresno-United Oil Co.'s 1, 23-15-18, sd 3960 ft.

KERN COUNTY

ADOBE CANYON—Calif. Pet.'s Glide 1, 25-27-28, abn 1100 ft.

Drive Your Drilling Costs Down



with a Young Drilling Engine

Johnny on the Spot!

When It Comes to Reducing Drilling Costs

The Only Foundation
3 Pieces of Plank

No Timbers or concrete foundation required. With only three (3) pieces of plank for frame to rest upon, and a single bunting pole, the Young Engine is all set up—a Matter of Minutes Only.

Specify a Young Engine for long low cost service in new drilling or cleaning out: for quick action in moving and setting up: for fuel economy using either gas or gasoline: for water conservation (a few quarts per day being sufficient): for an ideal drilling motion.

This Master Drilling Engine is the product of twenty years practical experience in building super-quality oil field power equipment.

It is complete, ready to run, requiring no additional accessories or auxiliary equipment. Timken Tapered Roller Bearings, a Hercules Motor, and Heavy cut gears of alloy steel, heat treated, are used. Write for Bulletin 7.

YOUNG ENGINES

Young Engine Corporation, Canton, Ohio

Western Representative:
H. A. LAURENCE
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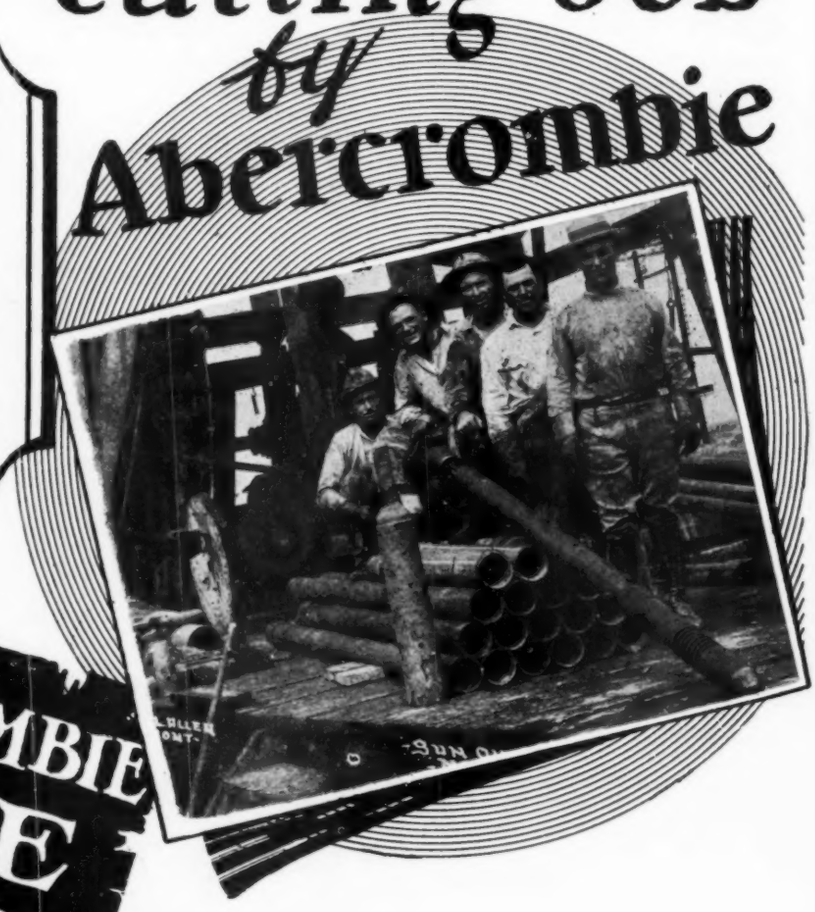
Drilling Engines
Air and Gas Compressors
Power Units
Orifice Gas Well Testers
Two Speed Gear Reduction Units
Parts Stocked at Dallas, Texas

Another Cutting Job by Abercrombie

—from below 5100 feet

The drilling crew at the right on McLean No. 14 well of the Sun Oil Co., Spindletop, made 18 cuts in 4½-inch —15.50 pound Liner and wire wrapped Screen, each and every piece removed, leaving the hole absolutely clean below the 6⅝ inch Casing. This operation was done with no loss of time.



J.S. ABERCROMBIE INSIDE CUTTING TOOL

In This Well the Wire Wrapped Screen and Well Bottom Was Cut and Removed!

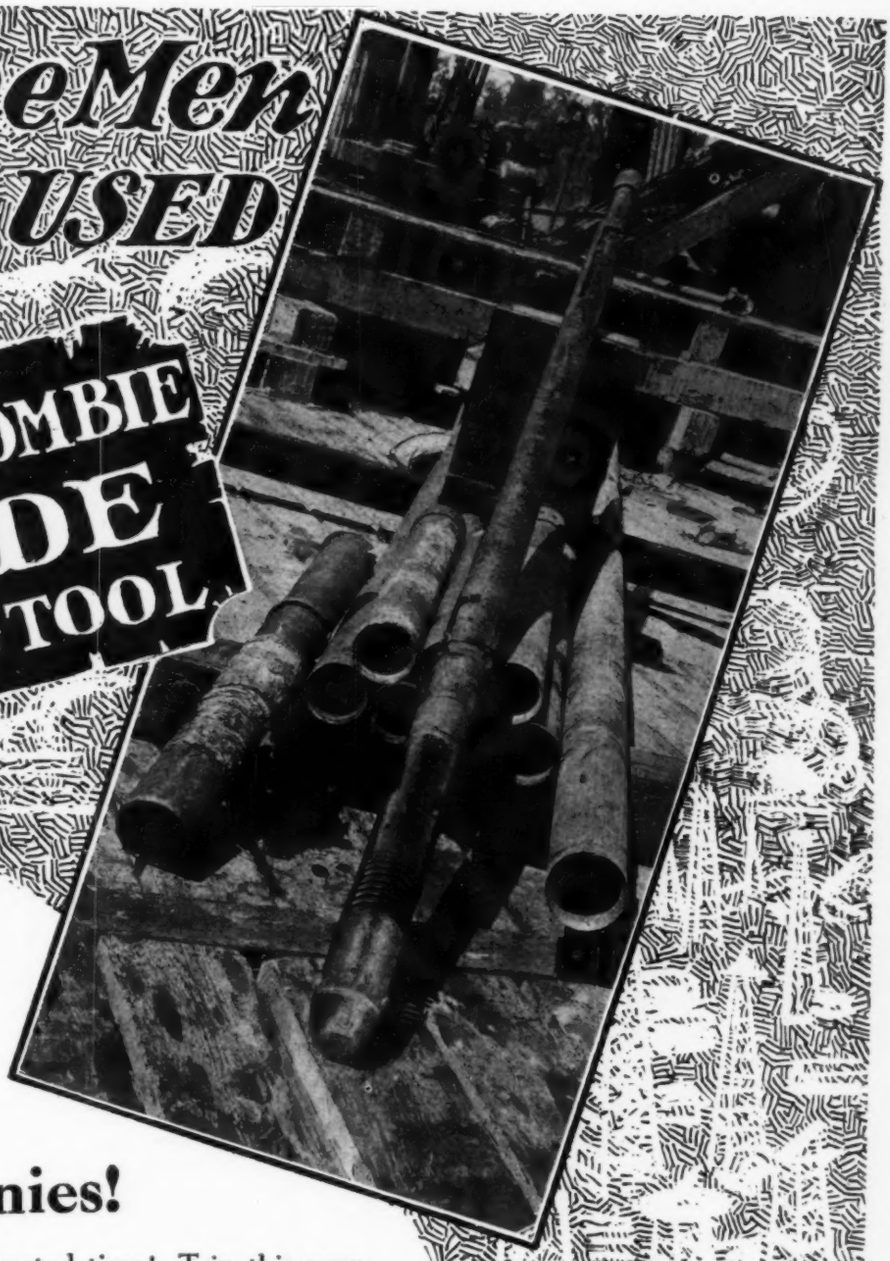
PERFORMANCE such as this leaves no room for doubt and PROVES the efficiency of the IMPROVED Abercrombie Inside Cutting Tool.

Cutting Out Well After Well for the SAME Oil Companies is Our Strongest Recommendation

J. S. ABERCROMBIE Co.
616-18 West Bldg. Houston, Texas

Say you saw it in The OIL WEEKLY

Ask the Men who have USED the J. S. ABERCROMBIE INSIDE CUTTING TOOL

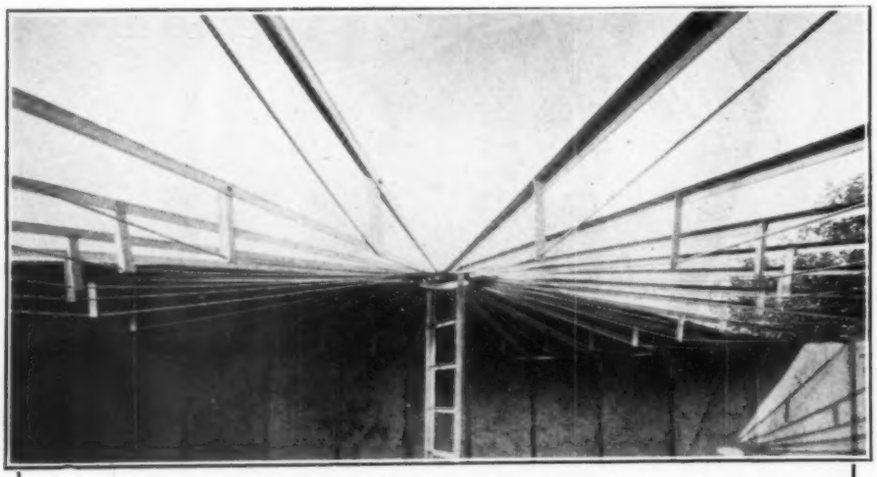


—then you'll know WHY we cut out well after well for the SAME Companies!

THERE'S NO DELAY! No wasted time! Trip this new IMPROVED tool wherever you want to start cuts in screen, liner or casing—and do the work quickly, economically, SUCCESSFULLY. Let OTHERS do the experimenting—while YOU save both time and money by following the example of many major oil companies who have Abercrombie do ALL of their "cutting."

ONE of our nine operators is ready to start YOUR "cutting job" TODAY!

J. S. ABERCROMBIE Co.
616-18 West Bldg. Houston, Texas



Maloney 5000-Bbl. Tank during construction—Showing cantilever construction of deck supports and double rows of bolt holes at seams A. P. I. Specifications.

NOW 5,000-Bbl. and 10,000 Bbl. Maloneys

MALONEY Bolted Steel Tanks can now be had in any capacity from 12 barrels to 10,000 barrels. The larger sizes, recently added to the MALONEY line, make available for long-time, volume storage the economies of the original bolted steel tank.

All sizes above 1500 barrels are made with heavy cantilever construction deck supports. Side seams are reinforced with rigid steel double-channels. Bolts are ½-inch, and are our new specially oil heat treated bolts of 90,000 pounds tensile strength.

MALONEYS are made of rust-resisting Keystone Copper Steel and painted with Maloney Special Pearl Gray Paint. The patented Maloney "crimp" causes parts to fit with accuracy. Use of our special rubber packing, and our Gaso cement, renders all seams oil, water and gas tight. Large cleaning out plates are set flush with bottoms. Valve and deck equipment is the best the market affords.

"Alone in Quality"

THE MALONEY TANK MFG. CO.

TULSA, OKLAHOMA

Distributors at All Principal Petroleum Points.

Sizes: 12 to 5,000 Barrels.

Packed in Steel-Bound Crates for Export.

Howell Aluminum "3 in 1" Vacuum Pressure Valve and Thief Hatch—The BEST and LATEST Deck Equipment—POSITIVE Safety

MADE OF KEYSTONE COPPER STEEL — MALONEY PATENTED BOLTED COPPER-STEEL TANKS — MADE OF KEYSTONE COPPER STEEL

MALONEY

ALONE!

BAKERSFIELD—Pacific-Eastern Prod. Co.'s Union Avenue 1, dr 4540 ft.

BELRIDGE—Zurich Oil Co.'s 1, 18-28-22, dr blue shale 1575 ft.

BUTTONWILLOW—Milham Explo. Co.'s K1A, 8-28-23, plug 3250 ft, td 4660 ft. McAdams Synd.'s 1, 26-29-23, sd 1590 ft.

COMANCHE POINT—Kern 29 Oil Co.'s 1, 29-31-30, sd 2440 ft.

DELANO—North American Cons. Oil Co.'s 1, 5-25-25, fsh for bit 3670 ft.

DEVILS DEN—Midway Northern Oil Co.'s 1, 25-25-18, will dr deeper from 2394 ft. Marathon Oil Co.'s 1 ,13-25-18, sd 4390 ft. R. H. Sayers' 1, 25-25-18, sd 1475 ft.

EDISON—General Petroleum's Kerwin 1, 5-30-29, 11-inch cas cemented 3780 ft, 200 ft good oil sand, td 4006 ft. George F. Getty's 1, 22-29-29, dr 3675 ft. Midway-Northern Oil Co.'s Brown 1, 29-29-30, lcn.

FRUITVALE—Pacific Eastern Prod. Co.'s 1, 21-29-27, dr shale 2986 ft.

GREENFIELD—Mays & Valencia's 1, 31-30-28, rig.

GOULD HILLS—Bomke & Ball's 1, 12-29-30, dr shale 1330 ft. California-Kentucky Oil Co.'s 1, 8-29-21, sd 1620 ft. J. F. Harrison Co.'s 3, 36-29-30, sd 210 ft. Jackson & Chamberlain's 1, nw¼ 25-29-20, new lcn. Mendicino-Midway Oil Co.'s 1, 28-29-21, sd 2930 ft. Max L. Pray's 1, 1-29-20, plug 765 ft, pumping some oil. Rhoads Oil Co.'s 1, 20-29-21, plug 1460 ft, pumps some oil. Moore & Delano's 1, 11-29-20, rig.

McFARLAND—Superior Oil Co.'s 1, 11-26-27, dr 2062 ft.

McKITTRICK—Abbott Pet. Co.'s 1, 2-30-21, sd 1940 ft. Lacy-Esper Pet. Co.'s 1, 18-19-22, sd 3265 ft. Keefe & Morrison's 7, 8-30-22, 12½-inch cas cement 650 ft, td 1832 ft. McKittrick Hills Oil Co.'s 1, 18-30-22, 6⅝-inch cas cmt 2185 ft, td 3250 ft. W. J. Jacobson's 1, 30-30-22, will test at 4845 ft. Ozena Oil Co.'s 1, 27-29-21, sd 1170 ft. Ridge Oil Co.'s 1, 13-30-21, sd 404 5ft.

MON BLUFF—Miocene Oil Co.'s 1, 34-27-28, rig. Shell's Glide 1, 3-28-28, dr 3160 ft. Union Oil Co.'s Tribe 1, 28-27-28, rigging rotary.

NORTH MIDWAY—Gore Oil Corp.'s 1, 34-30-22, sd 1350 ft. Electric Petroleum Co.'s 1, 34-30-22, dr 1660 ft.

NORTH POSO CREEK—Calif. Petroleum's Lehman 2, 6-27-28, spd; Lehman 3, 6-27-28, rig. Bruce Frame's 1, 18-26-28, dr 1128 ft. General Petroleum's 1, 21-27-28, dr brown shale 1500 ft.

SEMITROPIC—F. L. Morris' 1, 16-27-23, new location.

SHALE HILLS—Huntington-Hawthorne's 1, 35-26-18, sd 600 ft. Nelson & Mountford's 1, 18-27-19, sd 2690 ft. Oildale Oil Co.'s 1, 13-27-28, sd 560 ft.

SUNSET—Freeman-Sunmaid's 1, 16-11-24, sd 4200 ft. Raleigh Oil Co.'s 1, 8-11-23, 8¼-inch cas re-cmt 2590 ft, td 2608 ft.

TEMBLOR—Fortuna Oil Co.'s 1, 28-32-13, sd 2600 ft. Harrison et al's 2, 36-29-20, sd 100 ft. Salegna Investment Co.'s 1, 36-29-20, sr 220 ft.

TEHACHAPI-MOJAVE—C. R. Asmussen's 1, 23-11-11, sd 1510 ft. Crusaders Oil Co.'s 1, 21-10-10, testing 2372 ft.

KINGS COUNTY

KETTLEMAN—Associated's Smith 1, 12-23-18, sd 2045 ft. Bolsa Chica Oil Co.'s 1, 30-23-19, sd 3500 ft. General Petroleum's Oeschener 2, 9-inch cas cmt 5282 ft. Milham Explo. Co.'s Elliott 1, 2-22-17, gas showing 5565 ft. Monocline Dev. Co.'s 1, 7-21-21, dr hard sand 3676 ft. Hugh McPhail's 1, 13-24-18, dr 2100 ft. South Coalinga Oil Co.'s 1, 34-24-19, 8¼-inch cas cmt 288 ft, td 2920 ft.

SANTA BARBARA COUNTY

GOLETA—Barnsdall Oil Co.'s Edwards 1, plug 2485 ft, trying to locate water. Calif-American Holding Co.'s 1, lcn. Graham-Loftus Oil Co.'s Orella 1, sd 1600 ft. J. J. Rekar's La Patera 1, sd 1805 ft.

BUELTON—F. & W. Buttram's Odin 1, dr 884 ft.

ORCUTT—G. O. Gorham's 1, material on ground for rig.

SANTA YNEZ—San Marcos Oil Synd.'s 1, dr 3017 ft.

SANTA BARBARA—Henry R. Dabney's Wright 1, sd 135 ft. Twin State Oil Co.'s Modoc 1, 20-4-27, new lcn. Channell Oil &

You Can Forget the improved WICO

Once mounted and correctly timed it needs no oiling or adjustment

Hours of profitable oil production have been lost because "somebody forgot to oil the magneto" or "somebody put in too much oil."

Wico engineers have eliminated this difficulty by developing the **Self Lubricating** Wico.

Tested under oil field conditions

Nearly a year ago fifty of these improved magnetos were put on actual duty in the oil fields as a test of their satisfactory operation. They at once demonstrated the soundness of this improvement by setting new records for continuous performance.

Your WICOS Can Be Converted

Yes—your present WICO magnetos can be converted into this new model. For your convenience it will be done when repairs are needed, for an additional charge of one dollar.

This Coupon Will Bring You the Details

We would like to give you full information about the improved WICO. Just fill in this coupon and mail it to us.

WICO ELECTRIC CO.,
Springfield, Mass.
Send me full details regarding the improved Wico OC Magneto. How can they be converted to the new type?
We have ..... Wico Magnetos.

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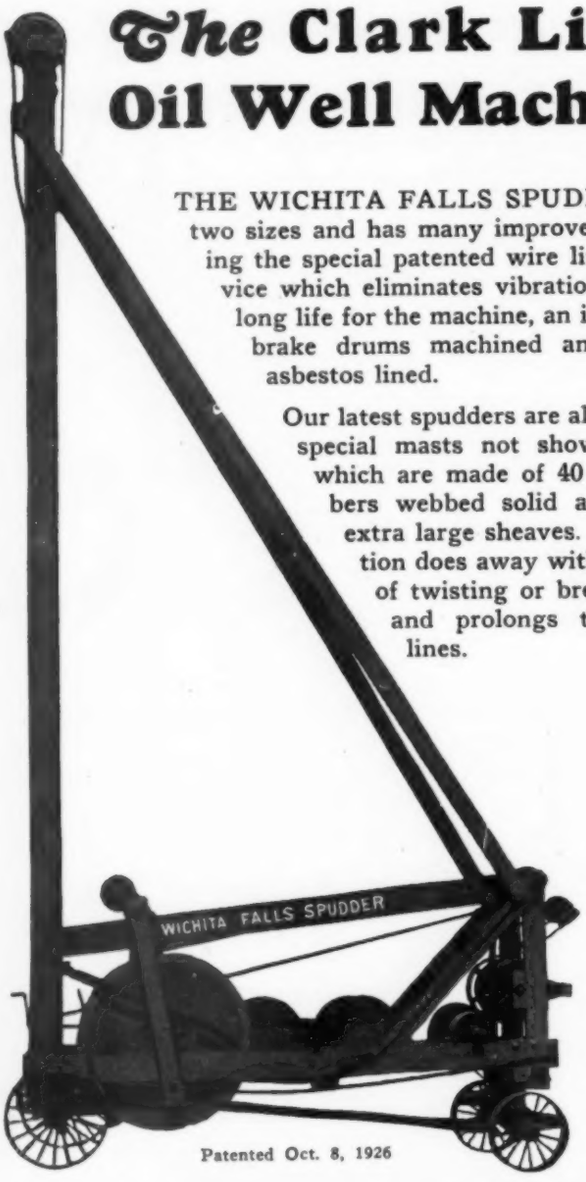
WICO ELECTRIC COMPANY, SPRINGFIELD, MASS.

Say you saw it in The OIL WEEKLY

The Clark Line of Oil Well Machinery

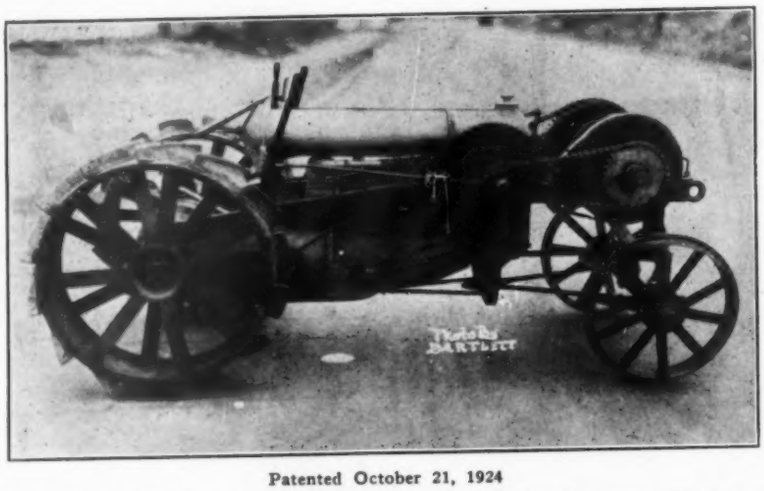
THE WICHITA FALLS SPUDDER is built in two sizes and has many improvements. Including the special patented wire line spudding device which eliminates vibration and insures a long life for the machine, an improved-clutch, brake drums machined and brake bands asbestos lined.

Our latest spudders are all furnished with special masts not shown in this cut, which are made of 40 foot, 5x12 timbers webbed solid at the top with extra large sheaves. This construction does away with the possibility of twisting or breaking the mast and prolongs the life of the lines.



Patented Oct. 8, 1926

Complete information on either or both machines will be sent without obligation.



Patented October 21, 1924

The Clark Winch for Fordson Tractor will handle your Rod and Tubing Jobs in the most economical and satisfactory manner.

Manufactured by,

Clark Machine Company, Wichita Falls, Texas

Development Co.'s 1, dr 5917 ft. Hollywood Oil Corp.'s 1, sd 1300 ft.

SUMMERLAND—C. F. Becker's 1, trying to locate water, will run string of 8¼-inch.

VENTURA COUNTY

CAMARILLO—Standard's Camarillo 1, dr 5700 ft.

FILLMORE—Sespe Oil Co.'s Smith 2, sd 4005 ft. Superior Oil Co.'s 1, 33-4-20, new lcn.

HOPPER CANYON—Bishop-Buckeye's Union 2, 35-5-19, sd 200 ft.

MONTALVO—Standard's Montalvo 1, bldg rig.

MOORPARK—E. A. Parkford's 1, changing to rotary, 4005 ft. Shell's Berylwood 2, dr 6080 ft.

RINCON—Bankline Oil Co.'s Needham 1, new lcn. Chanslor-Canfield Midway's Hobson 1-A, plug 6848 ft, td 7002 ft; will test; Hobson 1B, plug 5440 ft ,td 5738 ft, fsh for dr pipe; Hobson C1, rigging up; Hobson C2, rigging up; Hobson C3, rig; Hobson C4, lcn; Hobson C5, lcn. General Petroleum's Temson 1, rigging rotary; Hobson 1, rigging rotary; Ferguson 1, driving piles. E. J. Miley's H. & W. 1, lcn; H. W. 2, lcn. Montecito Oil Producers' Cota 1, dr 3500 ft. Pan-American's State 1, trying to locate water, td 3220 ft; State 2, lcn; Hobson Fee 1, spd; Hobson Fee 2, spd; Hobson Fee 3, spd. Petroleum Exploration Co.'s Hawkins 1, lcn. Scott Pet. Properties' 1, rigging rotary, td 315 ft.

SANTA PAULA—Meriam Petroleum Co.'s Anlauf 1, pumping 10 barrels, td 1330 ft. W. W. Bryant's Anlauf 1, oil showings 1126 ft.

STRATHERN—Shell's Parkford 1, dr 425 ft.

SOUTH MOUNTAIN—Ring Pet. Co.'s Converse 1, will make production test 3952 ft.

SQUAW FLATS—Border Oil Co.'s 1, sd 675 ft.

VENTURA—Associated's Dabney-Lloyd 1, 6¼-inch cas cmt on bottom, td 6917 ft.

MISCELLANEOUS

SAN LUIS OBISPO COUNTY—Arroyo Grande Oil Co.'s 1, 29-31-13, dr 920 ft. Barneyberg Oil Co.'s 1, 25-32-14, oil sand 2200 ft. Paso Robles Oil Co.'s 1, 34-27-13, dr 1455 ft. Miley Explo. Co.'s 1, 15-29-17, bldg rig. Richfield Oil Co.'s 1, 10-29-17, dr 1913 ft. Waklin Pet. Co.'s 1, 27-27-11, will deepen from 2475 ft.

SAN MATEO COUNTY—Shell's Cowell 1, 8-6-5, dr 5028 ft.

SONOMA COUNTY—Shell's Murphy 1, 8-5-7, abn 6385 ft; Murphy 2, 8-5-7, bailing 1955 ft.

TULARE COUNTY—Birch Oil Co.'s 1, 13-21-26, dr 2475 ft. Ducor Drilling Co.'s 1, 29-23-27, sd 4160 ft. Federal Explo. Co.'s 1, 15-22-24, sd 5460 ft.

OKLAHOMA

T 28n, 3w, Grant County—Sec 6, Otstot Dev. Co.'s Snyder 1, ne c sd 4518 ft.

T 27 n, R 21w, Harper County—Sec 24, A. F. Kopison Oil Co.'s Selman 1, ne c se, sp and sd.

T 27 n, 15w, Woods County—Sec 20, Sooner State Oil Co. & E. R. Black's Marcum 1, c sw, spd and sd.

T 27n, R 5w, Grant County—Sec 18, J. W. Bailey et al's Custard 1, c se, sd 4605 ft.

T 27n, R 1e, Kay County—Sec 8, Mathews et al's Buessing 1, nw c, cellar.

T 27n, R 1e, Kay County—Sec 28, Hazel, Atlas Glass Co.'s Vikery 2, nw c se se nw, lcn.

T 26n, R 4w, Grant County—Sooner State Oil Co.'s Royce 1, sw c nw, sec 34, sd 550 ft.

T 26n, R 3w, Grant County—Sec 16, Markham & Flannagan's Sherrer 1, ne c sw, sd 5369 ft tools in hole.

T 26n, R 2 E, Kay County—Sec 32, J. A. Vincent, et al's McNeal 1, nw c ne, fsh 2795 ft.

T 25n, R 22w, Harper County—Sec 14, Hoffer Oil Co., Cooper 1, nw c se, sd 4182 ft.

T 25n, R 4w, Grant County—Sec 22, Cowden et al's Vallner 2, ne c se ne sw, 5330 ft, run 5-in cas.

T 25n, R 1w, Kay County—Sec 15, Tonkawa Dev. Co.'s McDaniels 1, se c, fs at 3980-88 ft, 200 ft oih, td 4198 ft.

T 25n, R 1e, Kay County — Sec 10, Miller Brothers' Anderson 1, nw c se, hfw, 2565-90 ft, dr.

T 21n, R 1w, Noble County—Sec 7, R. L. Corley Williams 1, se c ne sw, sd 1920 ft, td.

T 6n, R 2e, Cimarron County (Okla. Panhandle)—Sec 24, J. G. Phillips' School Land 1, nw c, sd 3707 ft.

T 5n, R 2e, Cimarron County (Okla. Panhandle)—Sec 22, Sinclair O. & G. Co.'s School Land 1, nw c, dr 4161 ft.

T 5n, R 5e, Cimarron County (Okla Panhandle)

Tulsa the financial center

(Tulsa Tribune, Nov. 7, 1927)
Tulsa Bank Handles Major Stock Issue Alone for a Record
First Trust Underwrites $4,200,000 Financing Program of I. O. & G.
For the first time in oil and banking history a major stock issue has been underwritten by a Tulsa financial institution.
The First Trust & Savings Bank of which Waite Phillips is chairman of the board and Col. P J. Hurley, president, has underwritten an issue of 150,000 shares of treasury stock of the Independent Oil & Gas Co., it was said at the bank today.
The new issue will be offered Independent stockholders of record November 22 at $28 per share. The it will be held open until December 12.
$4,200,000 ISSUE
That makes the new financing total $4,200,000. It was understood today that there had already been a heavy subscription for the shares.
The First Trust and Savings is closely connected with the First National Bank, of which Grant R. McCullough is chairman of the board and R. P Brewer, president, and these bank officials had parts in completing the first transaction of this character in the city's history.
(Tulsa World, Nov. 15, 1927)
METROPOLITAN TULSA
The announcement has been made that the First Trust and Savings Bank has underwritten a $4,200,000 stock issue of the Independent Oil and Gas Company.
The importance of the matter is that for the time a financial transaction of major importance been carried out entirely through a local bank institution.
Heretofore it was assumed that any big money matters must be handled through New York or Chicago. Tulsa now steps forward as a metropolitan money center.
This is the beginning of a new era in Tulsa banking. It demonstrates that Tulsa is not only the Oil Capital of the world, but the money center of the southwest.
The biggest town in any county is the money center of that county. The biggest town of any state is the money center of that state. And the b town of any section of the country is th center of that section.
The importance of the matter is at once when stated in a different way:
The biggest city of any section is the money center section.
When Tulsa became the financial center of O homa, it was not long until it became the larg city in the state. When it has become the financi center of the southwest, *it will not be long until it becomes the biggest city in the southwest.*

When Hudson first set foot on the site of New York, could he have foreseen the great Wall Street and the House of Morgan to make New York the financial center of the world? When La Salle first stood on the shores of Lake Michigan, could he have foreseen the great packing industry or the House of Strauss to make Chicago one day the financial center of the Western United States? Or when Byrd drilled the first oil well in Oklahoma, did he possibly realize that in a few short years the First Trust and Savings Bank would underwrite a four million stock issue to presage Tulsa as the great financial center of the Southwest?

A FINANCIAL institution renders its greatest service to business and commerce only when it is able to assume fully the financial needs of its home industries. The First Trust and Savings Bank has initiated a new era of service to the Oil industry. It has blazed the trail for a financial metropolis in a state only twenty years old —in a section that has, in a few short years, converted its cattle trails into paved highways—that has multiplied the first oil well into 60,000 producing wells, releasing billions of dollars into the safe keeping of its banks. Oklahoma expects the complete service that her banks are designed to give. The First Trust and Savings Bank is ready to give this complete service as a banking institution of pre-eminence and strength.

FIRST TRUST & SAVINGS BANK

AFFILIATED WITH

THE FIRST NATIONAL BANK

TULSA, OKLAHOMA

RESOURCES EXCEED $30,000,000.00

Say you saw it in The OIL WEEKLY

—Sec 27, Ramsey Brothers' State 1, c nw ne, top 4265 ft, show 35 bbls, shot 30 qts 4090-4140 ft, td 4552 ft, pulling cas to repair pinched shoe.

T 5n, R 6e, Cimarron County (Okla. Panhandle—Sec 4, Ramsey Pet. Co.'s School Land 1, se c 4265 ft, sd.

T 4n, R 1e, Cimarron (Oklahoma Panhandle) —Sec 34, Ramsey School Land D1, c se, dr 1368 ft.

T 4n, R 25e, Beaver County (Oklahoma Panhandle—Sec 22, O. H. Bonner, et al's Maple 1, c se ne, rig.

T 3n, R 7e, Cimarron County (Okla. Panhandle)—Sec 25, Gladys Belle Oil Co.'s Israel 1, sw c ne, dr 4367 ft.

T 2n, R 9e, Cimarron County (Oklahoma Panhandle)—Sec 2, Fenton, Brookins & Flowers' Smaltz 1, sw c ne ne, spd and sd.

T 2n, R 18e, Texas County (Oklahoma Panhandle)—Sec 23, Connelly, Trammel & Danner's Graves 1, ne c sw sw, sd 315 ft.

T 1n, R 15e, Texas County (Okla. Panhandle) —Sec 26, Hydraulic Oil Co.'s Hitch 1, ne c, sd 600 ft.

T 1n, R 19e, Texas County (Okla. Panhandle) Sec 11, Three Way Oil Company's Price 1, se c nw, show gas 2560-2620 ft, sd 3005 ft.

T 24n, R 17w, Woodward County—Sec 32, Otstot Dev. Co.'s Simmons 1, se c sd 1500 ft.

T 24n, R 6w, Garfield County—Sec 9, Pulse & Beamer's White 1, se c nw, sd 4670 ft.

T 24n, R 3w, Garfield County—Sec 14, Sagar Oil Co.'s Garsarch 1, se c, dr 2640 ft.

T 23n, R 16w, Major County—Sec 4, Henry Landon's Parker 1, ne c nw, sd 1150 ft.

T 22n, R 5w, Garfield County—Sec 3, Ashby & Barr's Swinery 1, nw c, sd 740 ft.

T 21n, R 25w, Ellis County — Sec 9, Okla. Northern Oil Co.'s 1, c se nw, cas stuck 300 ft.

T 21n, R 21w, Woodward County — Sec 25, Sharon et al's Elmore 1, sw c, sd 2778 ft.

T 21n, R 5w, Garfield County—Sec 31, A. E. Summers' 1, Vanderwork, ne c nw, sd 1665 ft.

T 21n, R 4w, Garfield County—Sec 12, Beople et al's Schriver 1, c e l sw sw ne, sd 1850 ft.

T 20n, R 5w, Garfield County—Sec 2, Sinclair O. & G. Co.'s Fee 1, sw c ne, fsh tools 6254 ft.

T 20n, R 4w, Garfield County—Sec 9, Marland Oil Co.'s Looman 1, ne c se, dr 5622 ft. Sec 12, Marland Oil Co.'s Miller 1, sw c, sd 4586.

T 19n, R 4w, Logan County—Sec 8, Champlin Ref. Co.'s Musgrove 1, se c sw, dr 1170 ft. Sec 33, Bryan & Emery's 1, nw c se, r hole.

T 18n, R 15w, Dewey County—Sec 9, Huckelby & McCoy's Perfect 1, nec se 3274 ft.

T 18n, R 4w, Logan County—Sec 9, Brown & Blevens' Lovell 1, sw c nw, dry and plgd at 47119 ft. Sec 11, Welch, Acton & Brown's Hall 1, ne c se, sd 4525 ft.

T 18n, R 3w, Logan County—Sec 33, Haley & Pioneer Pet. Co.'s Quir 1, sw c se, fsh cas 3690 ft.

T 17n, R 5w, Kingfisher County—Sec 25, Ramsey Brothers' Pool 1, se c 4507 ft, dry and abn.

T 17n, R 1e, Logan County—Sec 20, T. B. Slick's Signs 1, nw c sw, sd 5067 ft.

T 17n, R 1e, Logan County—Sec 28, T. B. Slick's Berry 1, sw c se, sand 4658-61 ft, 2800 ft oih, show water 4666 ft, ur 6-in cas 5194 ft.

T 16n, R 7w, Kingfisher County—Sec 6, Pet. Eng. Cor Drlg Co.'s Campbell 1, c nw se, rig.

T 16n, R 5w, Kingfisher County—Sec 26, Galt Brown Oil Co.'s Johnson 1, c nw, ur 6-in cas 3926 ft.

T 16n, R 1w, Logan County—Sec 28, Blackford O. & G. Co.'s Lair 1, c s l n ½ se, sd 1675 ft.

T 15n, R 1w, Logan County—Sec 12 Bu Vi Bar Pet. Corp.'s Kirkpatrick 1, c sw, fsh 3865 ft.

T 14n, R 6w, Canadian County—Sec 9, A. D. Spears' Piatt 1, se c ne, sd 3223 ft.

T 13n, R 10w, Oklahoma County—Sec 18, Carroll Oil Corp.'s North 1, ne c, sd 1500 ft.

T 13n, R 3w, Oklahoma County—Sec 18, Slick & Bailey's Lufkin 1, c ne se, td 3750 ft, rust.

T 12n, R 3w, Oklahoma County—Sec 15, Cromwell O. & G. Co.'s Thompson 1, sw c ne, ne, dr 5900 ft.

T 10n, R 6w, Canadian County—Sec 1, J. V. Bailey's Robinson 1, c ne nw, spd and sd.

T 27n, R 9e, Osage County—Sec 7, C. B. Peters 1, ne c se, sp.

T 26n, R 8e, Osage County—Sec 13, Stephenson, Henry & Rock's 1, sw c nw sw, rig.

T 25n, R 7e, Osage County—Sec 8, I. T. I. O. Co.'s 1, se c ne, lcn. Sec 22, George Parker's 1, c s l ne, dr 1300 ft.

T 23n, R 10e, Osage County—Sec 7, Sheeders O. & G. Co.'s 1, c se, sd 2300 ft, tools in hole.

T 21n, R 10e, Osage County—Sec 30, Sand Springs Home 108, sw c ne, hfw 2085 ft, show of gas, dry and abn.

T 21n, R 6e, Pawnee County—Sec 16, F. R. Billingslea & 101 Ranch Oil Co.'s School Land 2, nw c ne se, dr 2700 ft.

T 18n, R 3e, Payne County—Sec 32, Garber, Pulse & Gloyd's Widows 1, ne c se nw, sd 1200 ft.

T 17n, R 3e, Lincoln County—Sec 20, Willis O. & G. Co.'s Gunn 1, nw c se, td 4677 ft, water sd.

T 14n, R 7e, Creek County—Sec 16 Bu Vi Bar Pet. Corp.'s Nero 1, c se ne, dr 400 ft.

T 13n, R 4e, Lincoln County—Sec 16, Bu Vi Bar Pet. Corp.'s School Land 1, c se ne, sd 4500 ft.

T 12n, R 8e, Okfuskee County—Sec 34, Transcontinental Oil Co.'s Knight 1, nw c ne nw, dr 1700 ft.

T 19n, R 10e, Tulsa County—Sec 24, Holmes et al's Ragen 1, nw c ne se, 850 ft sd.

T 19n, R 11e, Tulsa County—Sec 33, Anadarka Western Oil Co.'s Hodge 1, nw c ne nw sw, dr 2525 ft, hfw.

T 17n, R 13e, Tulsa County—Sec 1, E. A. Hawley's Taylor 1, se c ne, spd and sd.

T 16n, R 10e, Creek County—Sec 35, Mutra & Cole's Fore 1, ne c sw, dr 775 ft.

T 15n, R 9e, Creek County—Sec 33, C. G. Tibbens' J. Marshall 1, sw c se sw, machine.

T 14n, R 9e, Creek County—Sec 1, L. C. Wheeler & King's Morton 1, se c, nw, lcn.

T 14n, R 11e, Okmulgee County—Sec 19, White Eagle O. & R. Co.'s Bugg 2, nw c ne se, rog.

T 13n, R 9e, Okfuskee County—Sec 21, Barnsdall Oil Corp.'s Self 1, sw c se ne, dr 1350 ft.

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IDEAL

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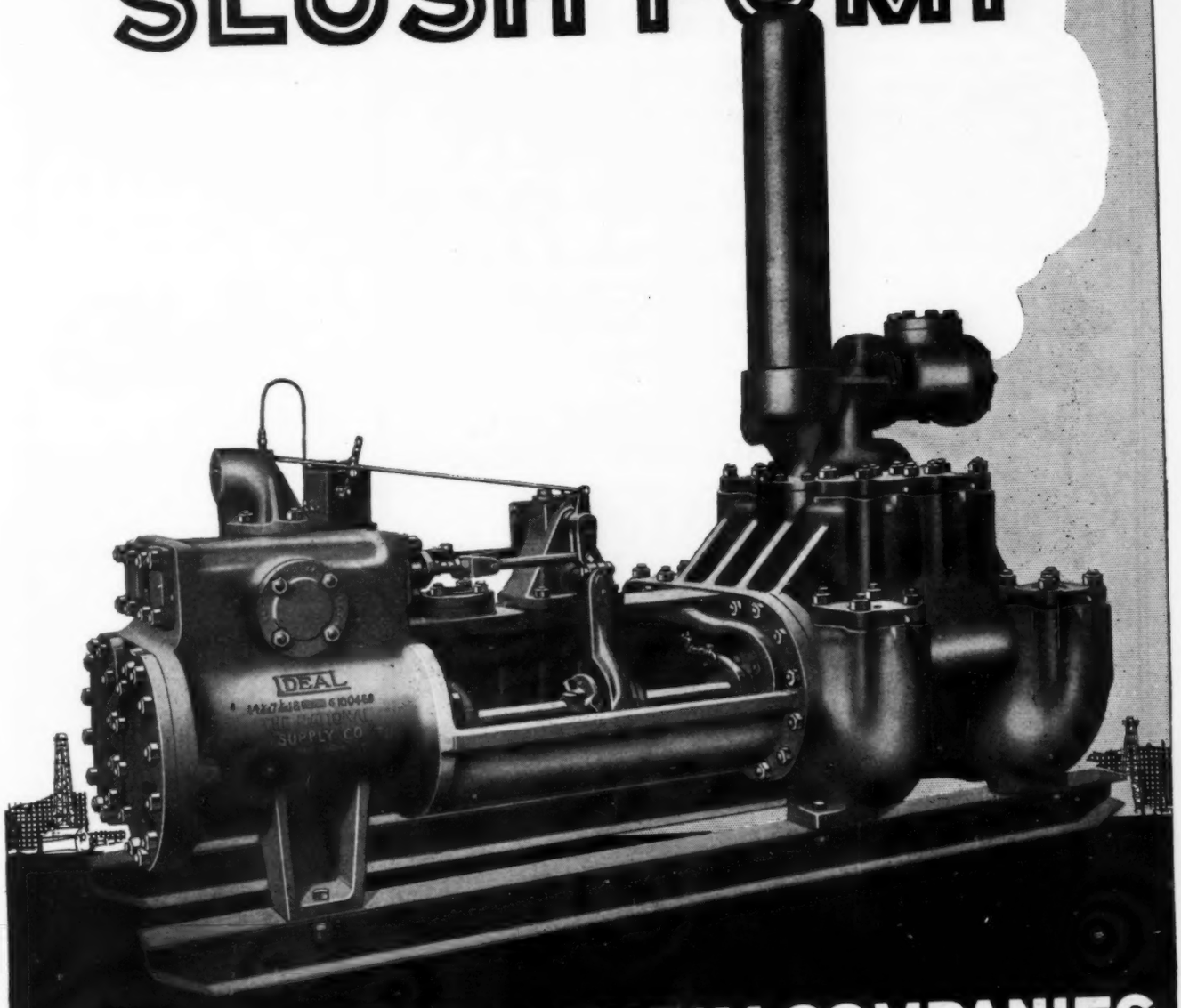
DUPLEX SLUSH PUMP



THE NATIONAL SUPPLY COMPANIES

Say you saw it in The OIL WEEKLY

T 12n, R 10e, Okfuskee County—Sec 8, Blakely et al's Yarhola 1, sw c se nw, dr 2600 ft.

T 11n, R 10e, Okfuskee County—Sec 4, Moose & Daniels' Stidham 1, sw c nw, sd 622 ft.

T 19n, R 15e, Waggoner County—Sec 11, J. H. Winters' Lynch 1, sw c nw nw, sd 250 ft.

T 18n, R 17e, Wagoner County—Sec 1, Towner & White's J. Lucky 1, sw c se nw, dr 600 ft.

T 15n, R 13e, Okmulgee County—Sec 6, Farrell & Lavery's Scott 1, nw c se, dr 1100 ft.

T 15n, R 18e, Muskogee County—Sec 12, C. F. Finefield's Jobe 1, dr 1210 ft.

T 11n, R 13e, Okmulgee County—Sec 27, G. N. Buzzard et al's Thompson 1, nw c ne ne, sd for 10-in 650 ft.

T 13n, R 17e, Muskogee County—Sec 34, Elk Dr. Co.'s McKee 1, c s l se se, sd, 160 ft.

T 13n, R 19e, Muskogee County—Sec 4, W. R. Sommerville's Carver 1, ne c se, ¶2 gas 898-912, show oil 1495-1513 ft, sd 1620 ft..

T 11n, R 16e, McIntosh County—Sec 36, J. E. Weible's Brune 1, sw c se nw, dr 1490 ft.

T 9n, R 16e, Pittsburg County—Sec 32, Pattison et al's Smith 2, ne c sw se, sd 3365 ft.

T 9n, R 18e, Haskell County—Sec 10, Marion Oil Co.'s Sanders 1, nw c ne sw, sd 1600 ft.

T 5n, R 18e, Latimer County—Sec 15, Limestone O. & G. Co.'s Murray 1, sw c, sd 1505 ft.

T 11n, R 2e, Pottawatomie County — Sec 22, Wilcox O. & G. Co.'s Hollis 1, sw c dr 4724 ft.
Sec 32, Wilcox O. & G. Co.'s Pickard 1, se c sw, td 3859 ft, cmt cas 3833 ft.

T 10n, R 2w, Cleveland County—Sec 22, Cromwell & Franklin's Donavan 1, c sw, sd 4706 ft.

T 10n, R 3e, Pottawatomie County—Sec 12, Sikes, Kilgore & Shaffer O&R Co.'s Ives 1, c se se, sd 4130 ft.

T 10n, R 4e, Pottawatomie County—Sec 28, Central National Oil Co.'s Toney 1, sw c, dr 3250 ft.

T 10n, R 5e, Pottawatomie County — Sec 16, Clark, Edwards et al's School Land 1, ne c sw, hfw 4022-50 ft, dr 4115 ft.

T 10n, R 5e, Seminole County—Sec 26, Sory & Swartz's Turner 1, se c sw se, dr 4630 ft.

T 10, R 7e, Seminole County—Sec 21, Gypsy Oil Co.'s Soloman 1, se c ne, ts 3730 ft td 3734 ft, pinch in to 210 bbls.

A Ratigan Polish Rod Grip
For Every Known Pumping Condition

The Ratigan Grips are designed and built to meet every pumping condition and requirement known in oil country work. Each style is the very best obtainable for its specific duty. They are positive, safe, fast and economical. Will not bend or otherwise damage your rod, requires no up-keep, and will last a lifetime. Are adapted for use on any well, light or heavy, and with any style beam hanger, or where no beam hanger is used at all.

Every Ratigan Grip meets the highest standards of all Ratigan "Sure-Grip" pumping equipment —a standard that has won and held the highest esteem of discriminating operators in all American oil fields for many years.

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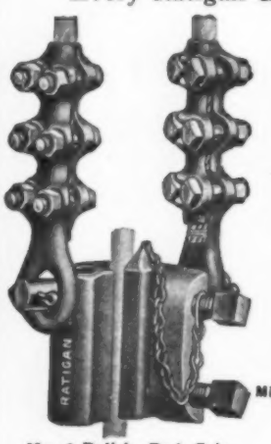
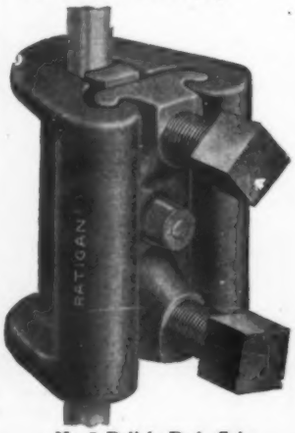


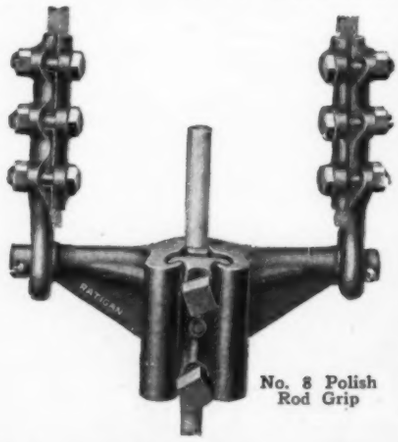
No. 6 Polish Rod Grip

Mid-Continent & Rocky Mountain Fields:
Frick-Reid Supply Company
East of the Mississippi:
All Supply Houses

California Fields:
Oil Well Supply Company
The National Supply Company
The Republic Supply Company
Associated Supply Company



No 7 Polish Rod Grip



No. 8 Polish Rod Grip

If It's a "SURE GRIP" It's SURE SAFE

T 10n, R 10e, Okfuskee County—Sec 5, Rogers & Wilson's Davis 1, se c sw ne, top Wilcox 4140 ft, td 4142 ft, hfw, D & A.

T 9n, R 1w, Cleveland County—Sec 7, Gault Brown Oil Co.'s Alexander 1, c nw, hfw, 4212-80 ft, swedging 6-in cas 4299 ft.

T 9n, R 2e, Pottawatomie County—Sec 2, McCullouch's Scott 1, ne c sw, td 5134 ft, pulling cas to plug.

T 9n, R 4e, Pottawatomie County—Sec 32, Independent O & G Co.'s Harber 1, ne c, setting 5-in cas 4710 ft.

T 9n, R 7e, Seminole County—Sec 15, Pure Oil Co.'s Jonah 1, nw c ne, ts 3493 ft, 10 bbls oil, td 3516 ft, pb 3510 ft, sd.

T 9n, R 8e, Seminole County—Sec 3, Empire G. & F. Co.'s Butler 1, sw c se, ts 3508 ft, td 3560 ft' water, pb to 3525 ft. ¶10 and 10 bbls oil per day.

T 8n, R 1e, Cleveland County—Sec 20, Mid-Continent Pet. Corp.'s Woodrow 1, sw c nw, sd 4725 ft.

T 8n, R 2e, Pottawatomie County—Sec 24, Superior Oil Co p.'s Jones 1, sw c nw ne, cmt 8-in 3919 ft.

T 8n, R 5e, Seminole County—Sec 14, Barnsdall Oil Corp.'s Fife 1, ne c nw, dr 3840 ft.

T 8n, R 5e, Pottawatomie County—Sec 16, I. T. I. O. Co.'s School Land 1, se c sw, sd 4096 ft.

T 7n, R 1w, Cleveland County—Sec 15, Sooner Oil Co.'s Vandeer 1, ne c nw sw, cmtd 8-in 2994 ft, sd.

T 7n, R 6e, Seminole County—Sec 7, Simon & Beam's Palmer 1, ne c nw ne, rig. Sec 13, Snowden & McSweeney's Tiger 1, nw c 3914 ft, cmt 8-in cas.

T 7n, R 7e, Seminole County—Sec 5, Mid-Continent Pet. Corp.'s Smith 1, nw c ne, top Wilcox 4443 ft, td 4444 ft, est 60 bbls per hour, shut in for tankage. Sec 32, I. T. I. O. Co.'s Marshall 1, nw c sw, ur 6-in cas 3910 ft.

T 7n, R 8e, Hughes County—Sec 21, Jarvis & Holmes' Street 1, nwc se nw, ur 8-in cas 2740 ft. Sec 11, Magnolia's Lefore 1, se c sw, 14, 4180 ft.

T 6n, R 2e, Pottawatomie County — Sec 10, Davis Detrick et al's McGahey 1, se c nw, sd 4988 ft.

T 6n, R 6e, Seminole County—Sec 1, T. B. Slick's Moore 1, sw c, ne sw, dr 2414 ft.

T 6n, R 7e, Seminole County—Sec 5, Magnolia's Vierson 1, sec nw, dr 3180 ft.

T 6n, R 8e, Seminole County—Sec 18, Carter Oil Co.'s Phillips 1, nw c ne nw, owd, dr 3421 ft.

T 5n, R 9e, Hughes County—Sec 20, Noble O. & G. et al's Wicket 1, se c, rigging up.

T 9n, R 22w, Beckham County—Sec 32, O&H Pet. Co.'s Barnes 1, nw c ne, owd, sd 2560 ft.

T 9n, R 5w, Grady County—Sec 13, Remington et al's Fulton 1, sw c ne, sd 720 ft.

T 8n, R 23, W. Beckham County—Sec 5, Prince Bros.' Martin & Atlantic's 1, c sw nw, fsh 2526 ft.

T 7n, R 22, W Greer County—Sec 16 Magnolia's Chiney 1, ne c, d- 2050 ft.

T 7n, R 5w, Grady County—Sec 13, Bedman et al 's Kemp 1, c sw ne, sd 2400 ft.

T 6n, R 10w, Caddo County—Sec 22, English Dr Co.'s Jacobs 1, nw c se, co 2570 ft.

T 6n, R 12w, Caddo County—Sec 29, W. J. Hartley, Gilbreath 1, se c nw se, owd, sd 3394 ft.

T 5n, R 7w, Grady County—Sec 7, Nichols & Page's Drake 1, c e l se, sd 1900 ft. Sec. 16, John Graham's Steelam 1, c n l nw nw, dr 2375 ft.

T 2 n, R 10w, Comanche County—Sec 10, Danciger Oil Co.'s Skitler 1, ne c se, dr 1760 ft.

T 1s, R 5w, Stephens County—Sec 8, Magnolia's Parker 1, nw c ne sw, dr 3438 ft.

T 2s, R 16w, Kiowa County—Sec 6, Landfair et al's 1, se c sw se, sd 2263 ft.

T 3s, R 6w, Stephens County—Sec 11, Dameron et al's Florence 1, ne c nw se, dr 600 ft.

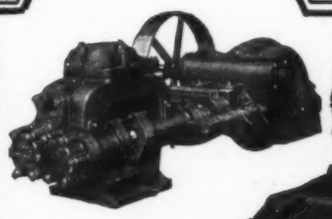
T 5n, R 4e, Pontotoc County—Sec 12, Gillespie et al's Fleming 1, sw c se, swab 50 bbls 2043-54 ft, 25 bbls at 2556-57 ft, hfw, Wilcox 2838-52 ft' pb to 2550 sd.

T 5n, R 7e, Pontotoc County—Sec 36, Shaffer O&R Co.'s Gilcrease 1, nw c ne, gas 2280-2310 ft td 2340 ft, flowing 150 bbls per day.

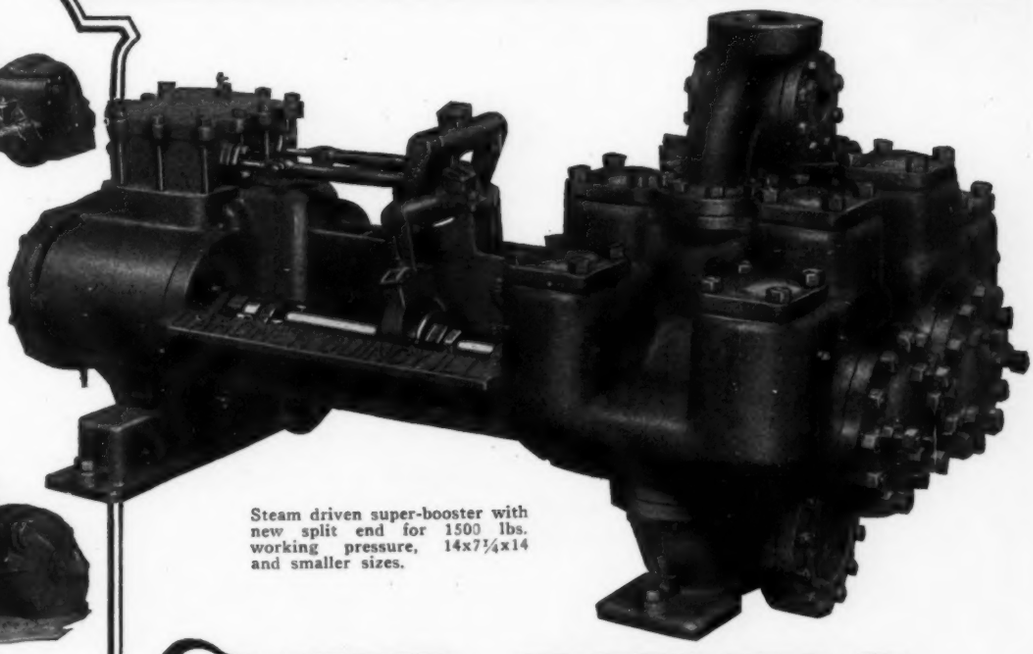
T 5n, R 9e, Hughes County—Sec 20, Noble O&G Co.'s Wicket 1, se c, rv stand.

T 4n, R 1e, Garvin County—Sec 15, Dixie Oil Co.'s Perkins 1, se c nw, cmt 8-in 3805 ft.

T 4n, R 3e, Garvin County—Sec 10, Garland Oil Co.'s Strickland 1, sw c nw sw, run 6-in cas 2320 ft.

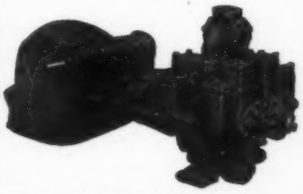


Enclosed self-lubricated power driven pump for portable rigs — 3½x5, 4x6, 3x10, 4x10, 4½x10.

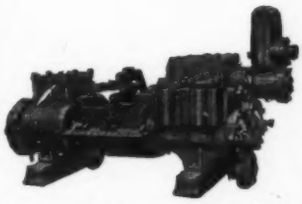


Steam driven super-booster with new split end for 1500 lbs. working pressure, 14x7¼x14 and smaller sizes.

Enclosed, self-lubricated, power-driven pump — 4x12, 4½x12, 5x12, 5¾x12.



Enclosed, self-lubricated, power-driven "super-booster" 7¼x14 and smaller.



Steam Driven, senior booster with improved lubrication feature—14x4½x12, 14x5x12, 14x 5¾x12, 14x6¾x12.

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from "Baby Booster" to "Super Booster"

Gardner-Denver offers the most complete line of mud pumps in the world. From a small enclosed self-lubricated power driven pump for portable drilling rigs to the 14x7¼x14 Super Booster for extremely heavy drilling or oil line service. This complete line of power and steam driven mud pumps is ideally suited for any requirements.

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GARDNER DENVER

ROCK WAUGH DRILLS

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The "American" Oil Well Pumping Jack!

The "American" Totally Enclosed Oil Well Pumping Jack has been designed in answer to the demand for the efficient pumping of individual oil wells.

American Jacks are made in three sizes—twelve-inch to fifteen-inch stroke, fifteen-inch to eighteen-inch stroke, and eighteen-inch to twenty-two-inch stroke. All gears are totally enclosed and run in a bath of oil which floods the bearings, insuring smooth operation and long life. The head proper may be disengaged from the cable and swung back from the walking beam, permitting the rods to be pulled without moving the jack itself. There are no screw mechanisms or adjustments necessary. No gears are exposed.

Compact, sturdy and economical in operation.

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T 4n, R 4e, Pontotoc County—Sec 10, Marland Oil Co.'s Lawrence 1, c sw se, lcn.

T 4n, R 6e, Pontotoc County—Sec 35, Bowles et al's Rayborn 1, sw c se, sd 1320 ft.

T 4n, R 7e, Pontotoc County—Sec 14, Henry et al's Johnson 1, ne c sw, sd 758 ft. Sec 25, Ada Cement Co.'s Potter 1, nw c ru stand.

T 3n, R 1e, Garvin County—Sec 12, Magnolia Pet. Co.'s Vaughn 1, nw c sw nw, ur 5-in 4375 ft.

T 1n, R 4w, Stephens County—Sec 18, Magnolia's Chrishom 1-a, sw c nw sw, dr 3735 ft.

T 1n, R 2e, Murray County—Sec 17, Revels & McGee's M. Wolfe 1, nw c, sd 125 ft.

T 1n, R 8 e, Coal County—Sec 35, W. E. McGraw et al's Patton 1, sw c se ne, ru stand.

T 1s, R 2w, Carter County—Sec 19, McGahee's Morris 1, sw c, nw ne, sd 3463 ft.

T 1s, R 2e, Murray County—Sec 27, Thompson Oil Corp.'s Freeman 1, se c, rig.

T 4s, R 1w, Carter County—Sec 33, Magnolia's Simpson 1, nw c ne nw, dr 4235 ft.

T 4s, R 2w, Carter County—Sec 13, Roxana Pet. Corp.'s Sarasota 1, se c, co 2250 ft.

T 5s, R 3w, Carter County—Sec 2, Roxana's Frazier 1, sw c ne, sd 3445 ft.

T 5s, R 4e, Marshall County—Sec 11, Bilbo et al's Chapman 1, ne c nw ne, sd 380 ft.

T 5s, R 7e, Bryan County—Sec 26, Magnolia's Marshall 1, nw c sw nw, dr 1925 ft.

T 7s, R 3e, Love County—Sec 7, Magnolia's Askew 1, nw c sw ne, cas trouble, td 2490 ft.

KANSAS

BARBER COUNTY—T 30s, 14w, Rowland et al's Pickens 1, owd, ne c nw ne, sec 27, dr 1811 ft. T 31s, 12w, Merriman et al's Winters 1, c e½, sec 17, dr 2425 ft. T 33s, 12w, Schaffer et al's Boggs 1, c sw, sec 19, dr 3480 ft. T 33s, R 13w, Schaffer et al's Carter 1, c se se, sec 2, dr 2640 ft.

BARTON COUNTY—T 18s, R 12w, Huffine & Crane's Everleigh 1, c sw sw, sec 6, dr 4195 ft. T 19s, R 11w, Huffine et al's Smith 1, ne c se ne sec 17, fsh 5090 ft. T 20s, R 13w, Everett & Wiley's Ward 1, nw c sw, sec 12, sd 3915 ft.

BUTLER COUNTY—T 25s, R 4e, Wichita Dr. Co.'s Joseph 1, ne c se nw, sec 18, sd 1725 ft. T 27s, R 3e, La Rob Oil Co.'s Baysinger 1, ne c sw, sec 24, rig. T 27s, R 5e, Cress, Frank et al's Bryson 1, ne c, sec 26, sp and sd. T 29s, R 4e, E. Wilcox et al's Holcomb 1, ne c se nw, sec 21, sd 1456 ft.

CHASE COUNTY — T 21s, R 7e, Grener, Fowler et al's Carson 1, ne c, sec 9, sd 750 ft.

CHAUTAUQUA COUNTY—T 32s, R 8e, Roth and Faurot's Hamil 1, nw c sw nw, sec 15, lnc.

CLARK COUNTY—T 31s, R 23w, Walker & Walner's Mitchell 1, sw c ne, sec 16, sd 420 ft.

CLOUD COUNTY—T 6s, R 4w, Concordia Oil Co.'s Murdock 1, se c sec 6, dr 3590 ft.

COFFEY COUNTY—T 22s, R 15e, Garland et al's Goff 1, se c sw se, sec 9, lcn. Crooks et al's Douglas 1, ne c se, sec 11, sd 450 ft.

COWLEY COUNTY—T 30s, R 3e, Vickers Pet. Co.'s Daniels 1, nw c ne, sec 3, dr 825 ft. T 30s, R 5e, Shawver et al's Myers 1, se c sw ne, sec 29, dr 2305 ft. T 30s, R 6e, Allison & Fitzwilliams' Manley 1, ne c nw se, sec 20, sd 450 ft. T 31s, R 4e, Brinn et al's Hughes 1, nw c sw, sec 20, dr 3005 ft. T 33s, R4e, Roth & Faurot's Adams 1, se c sec 32, dr 1630 ft.

DICKINSON COUNTY—T 16s, R 4e, Skow & Ritchey's Will 1, c nw nw, sec 2, lcn. Frank et al's Kutler 1, sw c se, sec 15, dr 2650 ft. Loy et al's Sherman 1, nw c sec 24, dr 1460 ft. Harwood & Winters' Utek 1, sw c se nw, sec 35, dr 400 ft.

ELK COUNTY—T 29s, R 12e, Elmwood Oil Co. & Phoenix Oil Co.'s Flack 1, se c, sec 6, sd 500 ft. T 31s, R 11e, Roth & Faurot's Elk Falls 1, nw c sw, sec 3, dr 600 ft.

ELLIS COUNTY—T 13s, R 16w, Tatlock et al's Leiker 1, nw c ne ne, sec 26, sd 2685 ft. Mid-West Refining Co.'s Reidell 19, nw c sw se, sec 27, 3870 ft, td pb to 3243 ft, shot 20 qts, 5 bbls, not comp.

ELLSWORTH COUNTY—T 15s, R 10w, Valerious Oil & Gas Co. et al's Maximer 1, c nw, sec 9, dr 2806 ft. T 16s, R 9w, Phil-Mac Oil Co.'s Gregory 1, c sw, sec 24, ur 2800 ft.

FRANKLIN COUNTY — T 16s, R 18e, Smith, Trace & Fisher's Owens 1, c e l e½ e½,

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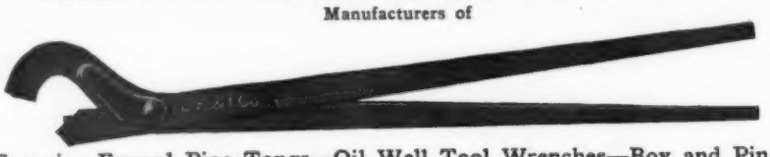

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sec 17, sd 1450 ft. T 17s, R 17e, Omer O. & R. Co.'s Bush 1, se c sw, sec 25, lcn.

GEARY COUNTY—T 10s, R 5e, Brinkley et al's Fawley 1, ne c nw ne, sec 16, dr 2502 ft.

GREENWOOD COUNTY — T 23s, R 12e, Jennings et al's Hollis 1, nw c sec 5, dr 2305 ft. T 25s, R 10e, Smalley & Bement Oil Corp.'s Rockhill 1, nw c ne, sec 12, sp. T 27s, R 13e, O. W. Culp et al's Lessenv. 1, se c ne ne, sec 33, sd 1685 ft. T 28s, R 12e, Swanson et al's Hayes 1, se c nw ne, sec 1, sd 1600 ft.

GRAHAM COUNTY — T 8s, R 25w, Gulf Coast Dr. Co.'s St. John 1, owd, sw c nw se, sec 27, dr 3023 ft.

JEFFERSON COUNTY — T 9s, R 19e, Northern Counties Oil Co.'s Edwards 1, se c nw nw, sec 13, sd 2405 ft.

LABETTE COUNTY—T 33s, R 17e, Cowell et al's Hornbeck 1, sw c ne sw, sec 1, sd 1375 ft. T 35s, R 20e, Wantland et al's Lipps 1, se c nw sw, sec 5, sd 910 ft.

LOGAN COUNTY—T 14s, R 33w, Coon et al's Andrews 1, owd, nw c ne nw, sec 14, sd 3855 ft.

LYON COUNTY—T 21s, R 10e, Hawks et al's Schroeder 1, se c sw, sec 14, lcn.

MARSHALL COUNTY—T 4s, R 7e, Marshall Oil Synd.'s Finn 1, nw c ne ne, sec 4, sd 2140 ft.

MARION COUNTY—T 17n, R 4e, Givins et al's Ucker 1, sw c ne, sec 31, fsh tools 1710 ft. T 18s, R 4e, Skow et al's Melcher 1, c ne se, sec 20, sd 1825 ft. T 19s, R 4e, Franks et al's Urich 1, sw c nw nw, sec 9, rig. Reed et al's Reed 1, nw c sec 17, td 2841 ft, pb to 2406 ft, sd. T 20s, R 4e, Empire O. & R. Co.'s Schlothour 1, ne c sw ne, sec 9, chat 2270-2705 ft, dr. T 21s, R 1e, Sun Ray Oil Co.'s Lehrman 1, sw c ne se, sec 1, sd 1985 ft.

MEAD COUNTY—T 33s, R 28w, Blackwell O. & G. Co., Lilly 1, c se, sec 9, dr 3015 ft.

MONTGOMERY COUNTY—T 3s R 14e, Ramler et al's Faler 1, c n l ne ne, sec 31, sd 1085 ft.

MORRIS COUNTY—T 14s, R7e, Klein et al's Barbe 1, se c nw, sec 32, rig. T 16s, R9e, Lambert et al's Southard, sw c se, sec 22, lcn.

NEMEHA COUNTY—T 3s, R 11e, Nemeha ft.O. & G. Co.'s Meyers 1, nw c, sec 19, sd 3050 ft.

OSBORNE COUNTY—T 9s, R 15w, Davis et al's Prather 1, se c sw, sec 30, sp.

OSAGE COUNTY—T 15s, R 15e, Barber et al's Lease 1, c se se, sec 3, sd 260 ft. T 15s, R 16e, West et al's Baley 1, sw c ne, sec 27, sd 800 ft. T 17s, R 17e, Mull Vit Dev. Co.'s Neil 1, nw c ne sw ne, sec 8, sd 3736 ft.

POTTAWATOMIE COUNTY—T 9s, R 12e, Crawford et al's Steward 1, c n l se se, sec 17, rig. Crawford et al's Bratchbar 1, sw c se sw, sec 31, rig. T10s, R 12e, Crawford et al's St. Mary 1, sw c, sec 11, sd 2290 ft.

RENO COUNTY—T 22s, R 4w, Dancenger et al's Williams 1, ne c sw se, sec 6, rig. T

RILEY COUNTY—T 10s, R 7e, Youker, et al's Theirer 1, nw c sec 20, dr 3008 ft.

ROOKS COUNTY—T 9s, R 16w, Keys Pet. Co.'s Rathburn 1, ne c sw, sec 14, sp and sd. T 10s, R 16w, Derby Oil Co.'s Kruse 1, ne c nw ne, sec 3, sd 2930 ft. Streeter & Stearns' Mattison 1, c nw, sec 28, dr 832 ft.

RUSH COUNTY—T 17s, R 17w, Valerious O. & G. Co.'s Schreverman 1, c nw, sec 27, sp and sd.

SALINE COUNTY—T 15s, R 2w, Menter O. & G. Co.'s Muir 1, sw c, sec 17, ur 2308 ft.

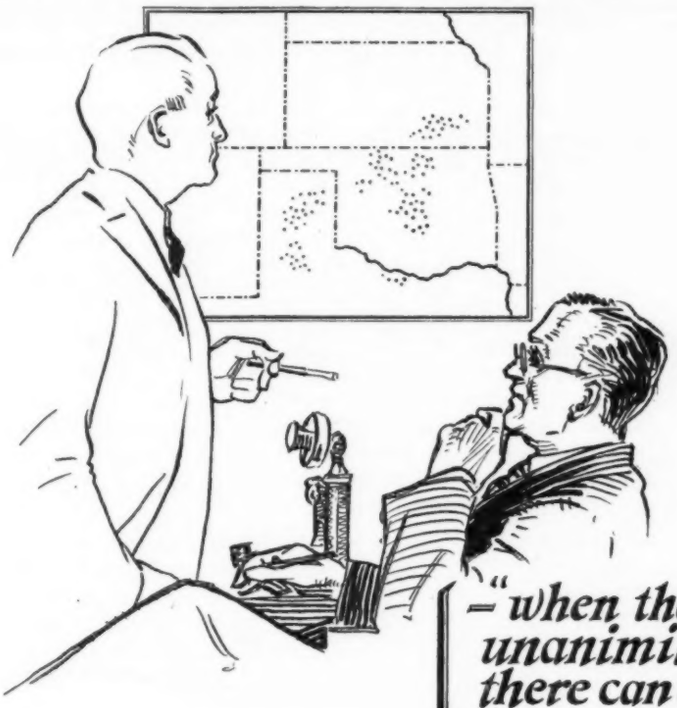
STAFFORD COUNTY — T 21s, R 11w, Harper et al's Siffers 1, owd, nw c sw ne, sec 23, sd 2936 ft.

STEPHENS COUNTY—T 33s, R 37w, Independent O. & G. Co.'s Jones 1, c sw, sec 31, td 3505 ft, pb.

SUMNER COUNTY—T 33s, R 3w, Otstot et al's Bartlow 1, se c, sec 22, sd 1850 ft. T 34s, R 2w, Gypsy Oil Co.'s Douglas 1, ne c se nw, sec 23, ts 4493-4499 ft, 16 bbls per hour. T 34s, R 3w, Jarvis et al's Wenrich 1, se c sw, sec 4, sd 3570 ft. T 34s, R 4w, Jarvis et al's Wycoff 1, sw c nw, sec 11, dr 3680 ft. Otstot et al's Volker 1, nw c ne, sec 9, rig.

WABUNSEE COUNTY—T 12s, R11e, Empire O. & R. Co.'s Schwalm 1, se c sec 19, fsh 3320 ft. T 13s, R 12e, Williams et al's Henderson 1, ne c sw ne, sec 15, sd 3600 ft.

WOODSON COUNTY—T 25s, R 14e, Howard et al's Riley 1, nw c sw, sec 31, lcn.



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BOILER SAVING: PERFECTO Low Pressure Gas Burners have been used on as high as seven drilling jobs, without re-flueing the boilers. With thousands of these burners in use, some for over two years, there has never been a single proven instance of where a PERFECTO Burner has blistered the crown sheet or side sheet of any boiler.

A CLEAR BLUE FLAME: PERFECTO Low Pressure Gas Burners deliver a clear blue flame, producing the Highest Possible Heating Efficiency.

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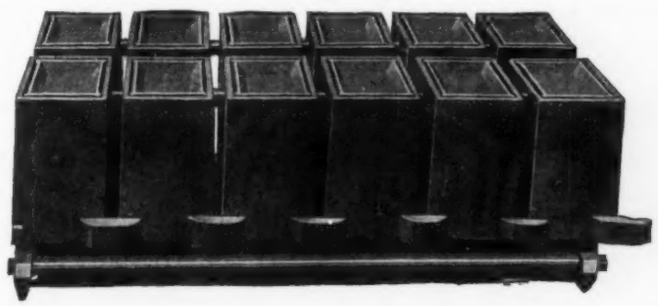

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Report Reviews Bureau of Mines Activities in Investigating Recovery Problems

Washington, D. C.—A number of methods for increasing the recovery of oil from sands are being studied by the Bureau of Mines, it is indicated in the annual report of Director Scott Turner for the fiscal year ended June 30, last, just submitted to Secretary of Commerce Hoover. The pioneer work of various engineers of the bureau, it is stated, indicates that even the most efficient commercial methods of production fail to recover half the oil in the underground sands, and it is estimated that one-fifth to one-fourth is obtained by ordinary methods. This amount can sometimes be doubled by scientific repressure of the oil sands with gas or air.

The problem has been divided by the bureau into four heads (1) increasing the recovery from producing fields; (2) repressuring exhausted fields; (3) other methods of recovery—mining the oil sands, heating, vacuum, etc.; and (4) fundamental studies of the flow of oil, gas, water, and mixtures of the three through the sands; studies of the structure and porosity of sands.

The use of natural gas for lifting oil from deep wells is being studied at the Petroleum Experiment Station of the burea at Bartlesville, Oklahoma. The mathematical and engineering principles that underlie the design and installation of lifts, or siphons, have been worked out. In the Elliott (Oklahoma) pool the daily production of petroleum was increased 240 per cent in less than 18 months through the use of compressed air.

A study to determine the most efficient methods of production at deep oil wells in California has been confined to collecting data on the use of compressed air and natural gas—methods in general use in the California fields.

An investigation of methods of producing oil in the fields of Pennsylvania, West Virginia and Eastern Ohio has included the collection and analysis of data on the use of compressed air, natural gas and water flooding to increase the recovery of oil.

A study was made in the Salt Creek field to determine the most efficient method for producing oil at flowing wells by maintaining the gas-oil ratio at the minimum. A report giving the results obtained by controlling the rate of flow has been prepared, the tests showing that there are two distinct types of wells—one responds to the reduction of the gas-oil ratio and the other does not. Arrangements have been made for tests in other Rocky Mountain fields.

Other petroleum work performed by the bureau during the year is summarized as follows:

Pressure Control of Oil Wells.—During the development of the Davenport, Oklahoma, oil field, a study of the pressure control of flowing wells showed that the flowing life could be lengthened and the ultimate recovery from the oil sands probably increased by careful control of pressure. For each well a point can be determined at which the maximum amount of oil can be produced with the minimum amount of gas.

Removal of Paraffin Deposits From Oil Wells.—At the Laramie, Wyoming, office a study of the accumulation of paraffin in oil wells was continued. The different wax fractions that make up the paraffin deposits were separated and their melting points and molecular weights determined. A printed report is to be published.

Mud Fluid for Oil and Gas Wells.—Investigation of the use of mud fluid was continued. Several phases of the problem were studied, including the plugging of abandoned wells. Settling tests indicated that the mud might in time settle out of the fluid so that the well would no longer be satisfactorily plugged.

Application of Vacuum to Oil Wells.—An investigation of the application of vacuum to increase the production of oil wells was completed at the Petroleum Experiment Station. Results showed that the effectiveness of vacuum depends on local conditions at each well. If the sand is open textured vacuum may encrease production; but if the sand is "tight" vacuum is useless, and may sometimes be harmful. The fact seems to be established, however, that the use of vacuum increases the gasoline content of the casing-head gas, and this increase may benefit the leaseholder after a property is greatly depleted, as his royalties on gasoline may be more important than his revenue from oil. However, experiments on high-grade and medium-grade crude oils show that at present, when the price of natural gasoline is low, leaving the gasoline in the crude would be more profitable than recovering it from the gas.

Treatment of Oil Field Emulsions.—Emulsions of water in oil cause enormous losses annually in the United States. In a recent two-year period 100,000,000 barrels of this tut oil, it is estimated, was produced in the Mid-Continent and Gulf Coast fields, and only half was successfully treated. As in the same period 568,039,000 barrels of crude oil was produced in the two fields, almost one-fifth of the oil production required treatment before it could be marketed, and as the average price for oil in the two fields was about $2 per barrel a total of some $200,000,000 was involved. The formation and treatment of emulsions are described in Bulletin 250, Oil Field Emulsions, published during the year.

Use of Diamond Drill.—The diamond drill, widely used in prospecting for coal and ores, is being used in Northern Oklahoma for determining geologic structure as well as for testing for oil. Several oil wells in Mexico and test wells in a num-

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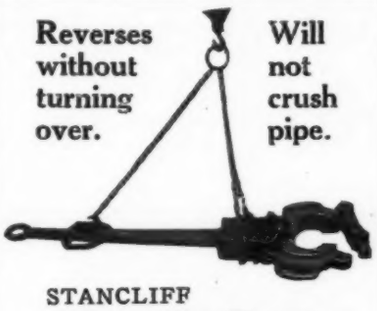

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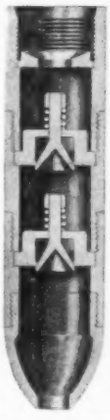

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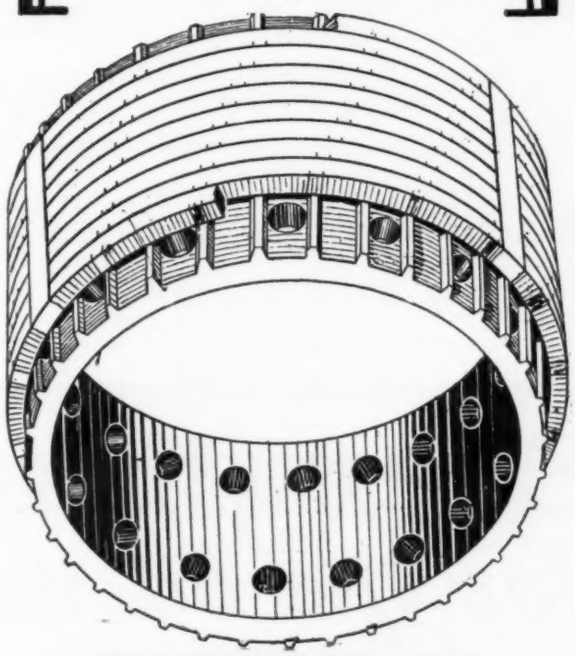

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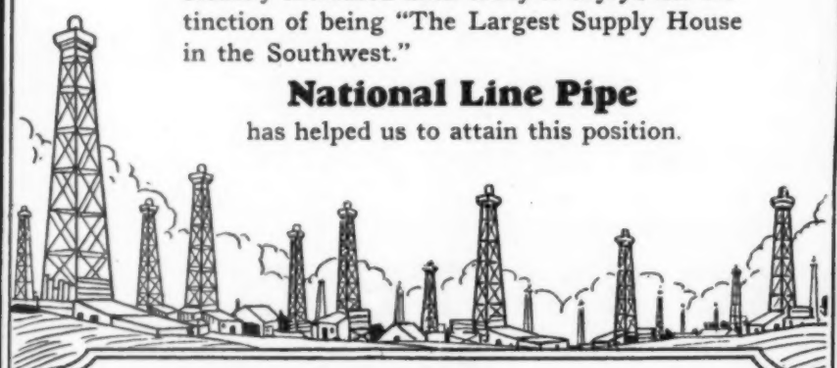

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HOUSTON – SAN ANTONIO – SHREVEPORT

ber of States have been sunk with the diamond drill. Bulletin 243, Diamond Drilling, with Special Reference to Oil Field Prospecting and Development, gives results of an exhaustive study.

Analyses of Underground Waters in Oil Fields.—To prevent a destructive water from entering the productive oil sand, it is essential to identify the water and determine the stratum from which it is coming. Technical Paper 404, Identification of Oil Field Waters, issued by the bureau during the year, shows how analysis of underground water should be reported and how a water can be identified.

Engineering Reports

Engineering Reports on Various Oil Fields.—Substantial increases in the production of oil from a number of important fields have been effected through the work of the bureau's specialists, who recommend to operators methods of repairing wells in order to control the movement of water into the oil sands. Final reports on the Powell and Wortham Fields of Texas were submitted for publication; investigations were started in the Texhoma-Gose and Putnam fields in Texas; and reports on engineering problems in the northern part of Cushing field and the Davenport field in Oklahoma were published. A study of the Greater Seminole area in Oklahoma, one of the largest and most prolific oil fields ever discovered in this country, was begun.

Salvages in the Oil Industry.—Data obtained from the auditing departments of a number of the larger oil companies in the United States showed the value of a well organized salvage department. A technical paper pointing out the savings that are possible by repairing used equipment is now in preparation.

Tests Extend Range of Oils for Producing Lubricants.—Service tests in internal-combustion engines, at the San Francisco field office, of lubricating oils made from California crudes indicate that lubricating oils need not be refined as highly for use in automotive equipment as for use in turbines and similar machinery; thus considerable savings may be made in present refining processes. The service tests were undertaken co-operatively by the Bureau of Mines and the American Petroleum Institute. Results are given in Technical Paper 387, Engine Service Tests of Internal-Combustion Engine Lubricating Oils Made from California Crude Petroleums. During the year tests were made to determine the influence of the viscosity-volatility ratio of motor oils in engine service.

Examinations of American Crude Petroleums.—Crude Oils from several selected localities of particular interest, including the newer fields of California, the new production of Spindle Top, Texas, and the Michigan fields, were examined. Special attention was paid to the oils from the Seminole area of Oklahoma. The properties of typical crudes from Venezuela are given in Serial 2807, recently issued.

During the past six years, the Bureau of Mines has made and published several

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Without obligation, please send me full details of the Halliburton Sand Tester, together with prices.

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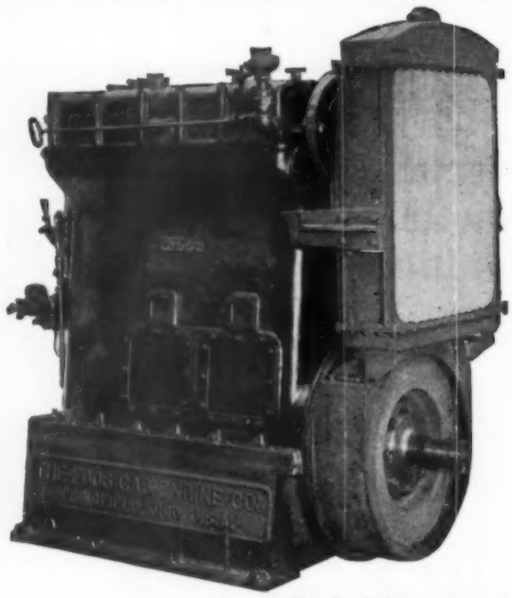
Say you saw it in The OIL WEEKLY



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Diesel Oil and Natural Gas Engines for your Service

Authorized Sales Agents
SOUTHERN ENGINE & PUMP COMPANY
HOUSTON, TEXAS

BUY USED PIPE
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75,000	ft	2"	used line pipe	15,000 ft. 5-3/16"	used casing
75,000	ft	3"	used line pipe	15,000 ft. 6-5/8"	used casing
30,000	ft.	4"	used line pipe	5,000 ft. 8-1/4"	used casing
20,000	ft.	6"	used line pipe	5,000 ft. 10"	used casing
10,000	ft.	8"	used line pipe	1,000 ft. 12½"	used casing

Three complete strings Standard Drilling Tools.
150 tons 60 lb. No. 1 relaying rails.

We buy abandoned pipe lines and oil wells. If you have any to sell, communicate with us before you dispose of them.

BRANCH STORES
Wichita Falls, Holliday, Vernon, Breckenridge, Texas
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Keystone Pipe & Supply Co.
HOLMES BUILDING
FORT WORTH, TEXAS

Equipment Supplies

For Oil Field Representation

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hundred analyses of typical crude oils and has developed a system of interpreting analyses and of classifying crudes. The samples analyzed represent petroleum from almost all of the important producing fields in the world and of virtually every geologic age. The Bureau's system of interpretation is apparently adequate for classifying crudes into four main groups, and has proved convenient in studying the relationships between geologic and the probable refinery yields of valuable products. Information on the interpretation of crude oil analyses is contained in Serial 2806, recently published.

Chemical Treatment of Light Petroleum Distillates.—Experimental work on the chemical treatment of gasoline and similar products was continued. It included: (1) The effect of fractional distillation by different methods on the subsequent need for treating the distillate, and (2) the treatment of gasoline made from sour natural gas. As to the latter, results showed that treating the gas itself was usually cheaper and always more effective than treating the gasoline. Fractionation was studied in the belief that the deleterious substances that must be removed from gasoline by chemical treatment exist only in certain small fractions. That this belief was true has been demonstrated for several gasolines made from different crudes and for distillates from different cracking methods. The conclusion reached is that isolating and treating the offending fractions is cheaper and better than treating the gasoline as a whole.

Sulphur Compounds in Crude Petroleum.—Sulphur compounds are among the most troublesome substances in crude petroleum. They are apt to cause corrosion and are thought to cause part of the emulsion troubles of the oil fields. Color, odor and sourness of petroleum products are also attributable to these compounds. The problem of their constitution, removal, and possible utilization is being studied at the Petroleum Experiment Station.

Chemical Study of Crude Petroleum—Experimental work on Salt Creek, Wyoming, crude indicated the need for a thorough investigation of the constituents of the lubricating oil fractions of a high-grade paraffin-base crude. Five barrels of a West Virginia crude were fractionated at low temperatures to avoid possible decomposition. After removal of the gasoline most of the wax was separated by solvents, and by a second distillation the lubricating constituents were obtained in one large fraction; this was separated, by solvents, into a series of cuts whose properties are being determined. The work has shown that crude oil contains substances far superior as lubricating oils to those commonly made by skilled refiners and is expected to yield data for working out refining methods better than those now in use. The study is also yielding data tending to establish the composition of some of the little-known compounds in crude oil.

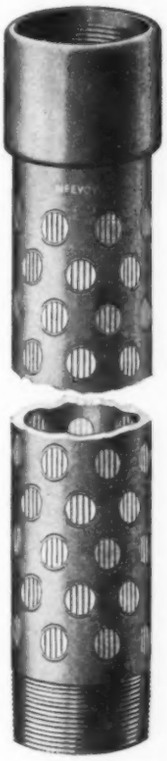
Motor-Gasoline Surveys.—The customary semi-annual surveys of the motor gasolines sold throughout the United States were made. Samples collected in 10

McEvoy Wireless Well Strainers and McEvoy Products

Represent

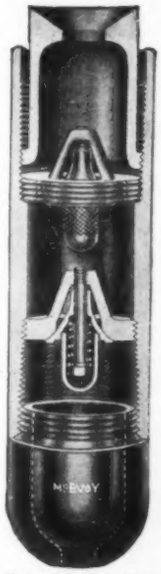
Simplicity—Quality—Durability

McEvoy "Wireless" Well Strainer



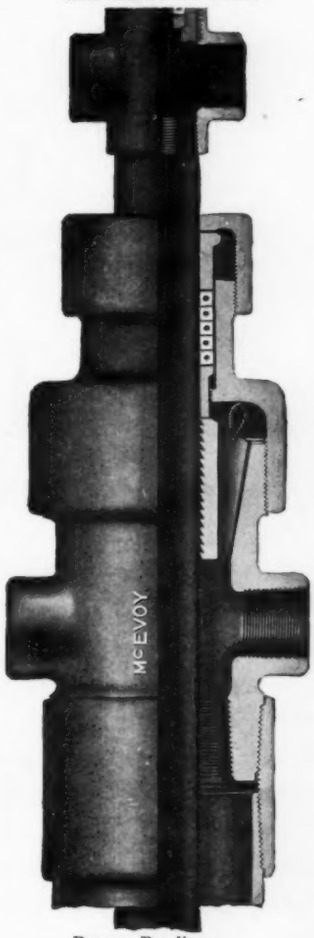
Patented
Also Made in Flush Joint

McEvoy Set Shoe Assembly



Pat. Applied For

McEvoy Universal Casing and Control Head



Patent Pending

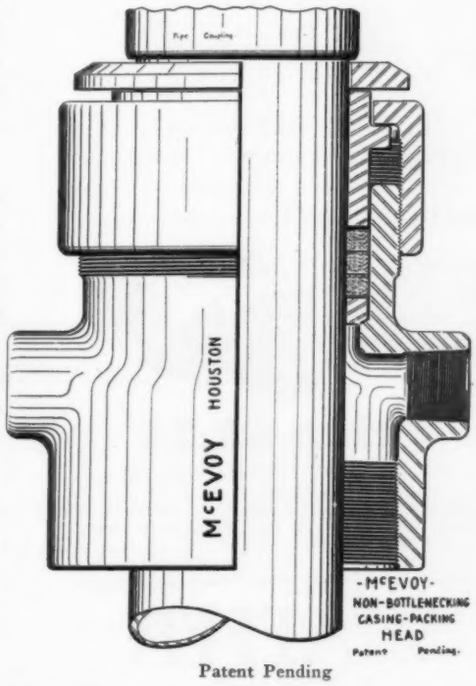
McEVOY "WIRELESS" WELL STRAINERS can always be set without damage, and their inlet area, "straining capacity" and delivery of fluid is second to none. They need no "run around" arguments to demonstrate their operation, as that is taken care of by least resistance, according to sand conditions. They are made with either Brass Strainer Plugs, or Heat Treated, Case Hardened Strainer Plugs.

McEVOY SET SHOE ASSEMBLIES with two (2) BACK PRESSURE VALVES are indispensable for setting strainer, or floating in the longest strings of pipe. The valves are screwed into the shoe, not "just set in" and held by temporary make-shift devices, and like all other McEVOY PRODUCTS, are good mechanical jobs, properly proportioned and designed, as we have long ago departed from the "ox-cart" stage of oil field equipment and design.

McEVOY "UNIVERSAL" CASING AND TUBING CONTROL HEADS as shown above to the right are designed to meet every need of the top of a well. They are made of Electric Cast Steel; carefully machined and fitted, and tested to 2500 lbs. pressure, therefore, they are gas and oil tight, and they have been tested to carry tubing loads in the Slips set in place at above 75,000 lbs.

In designing this "UNIVERSAL" CASING HEAD, studied effort was made to use the simplest, strongest, and quickest means for connecting the parts, therefore, threaded connections were adopted, and chain tongs, which are always at hand on a well, are the only tools necessary to connect the entire "set up." They are practically Main Bodies or Trunks for your "CHRISTMAS TREES."

THE CASING REDUCING HEAD shown here, below to right, has been developed to meet the needs of Oil and Gas Wells. It packs off the Casing from the inner string securely, and the weight of the suspended string is only partially on the packing for final security, with no danger of bottle-necking, the greater weight being on the Cap and Casing. This, together with the McEVOY "UNIVERSAL" CASING AND TUBING CONTROL HEAD mounted thereon, gives the user a wide selection of pipe sizes for any condition of the well. See our advertisement in issues of September 2, Pages 101-133, and September 23, Page 203, which illustrate and describe some of McEVOY PRODUCTS.



Patent Pending

J. H. McEVOY & COMPANY

HOUSTON, TEXAS

Pacific Coast Representative:
McEvoy Screen Pipe Co.
2426 E. 56th St., Los Angeles, Calif.

Say you saw it in The OIL WEEKLY

Old

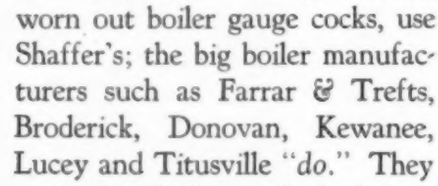
fashion equipment

has no place today with modern, efficient drilling and producing equipment.

Do away with old style, leaky, worn out boiler gauge cocks, use Shaffer's; the big boiler manufacturers such as Farrar & Trefts, Broderick, Donovan, Kewanee, Lucey and Titusville "*do*." They equip their boilers with the best—you can do the same.

Try a set from your supply store and you'll wonder how you ever got along without them.

J. E. SHAFFER CO.
316 Mid-Continent Bldg.
Tulsa, Oklahoma



Price $2.25
All Parts Are Interchangeable
Made in two sizes, ½ or ¾-inch. Furnished with combination fibre wheels or a special all-metal wheel for strong alkali water. Extra wheels 25c each.

SHAFFER
The Standard Boiler
Gauge Cock

representative cities were examined. The results were reported in Serials 2765 and 2795. Little change in the quality of gasoline is apparent.

Characteristics of Natural Gases.—It has long been evident that differences in the natural gas of different fields have important bearings on engineering problems. The Petroleum Experiment Station is therefore making a survey of natural gas to determine the relationships between chemical analysis as ordinarily made and such little-known characteristics of the gas as viscosity and specific heat.

Gas Measurement Problems.—In co-operation with the Natural Gas Association of America, the Petroleum Experiment Station has studied various factors influencing the correct measurement of natural gas. A detailed study of how constrictions and turns in pipe lines affect the metering of gas through orifice meters showed that often where a minimum length of straight and unrestricted flow on the upstream side of the meter could not be provided a straightening device could be installed in the line to correct the turbulent flow caused by an ell or gate valve.

Development of Formulas for Pipe Line Flow.—The design of pipe lines for gas has been somewhat unsatisfactory because existing formulas, worked out to fit particular conditions, do not apply generally. In co-operation with the Natural Gas Association of America the Bureau of Mines is correlating the characteristics of various gases with flow through commercial pipe lines and studying peculiarities of construction as they effect the flow of gas. It is hoped that this study will lead to the development of a universal formula for the design of efficient pipe lines.

Saving Lives in the Petroleum Industry. Good progress was made during the year in interesting oil producing companies in the adoption of safe practice and the installation of safe equipment for drilling and producing operations. Safeguarding of workmen at oil derricks is discussed in Bulletin 272. A study of safe and unsafe practices at natural gasoline plants in California was started. The safety work in the oil fields and refineries of the Mid-Continent region showed encouraging results.

Shale Investigations

Oil Shale Studies.—The experimental oil shale plant of the Bureau of Mines on Naval Oil Shale Reserve No. 3, near Rulison, Colorado, was shut down June 30, 1927. The bureau had requested an appropriation of $70,000 for continuing operations another year, but the item was lost when Congress adjourned without passing the second deficiency bill.

The plant at Rulison includes a Pumpherston retort, purchased in Scotland, and an American type retort, known as the N-T-U. After a preliminary heating period of about three months the first run of the Pumpherston retort began September 17, 1926. The retort was operated almost continuously from that date until midnight of June 30, 1927. The first run of the N-T-U retort was made January 17, 1927, and the retort was operating inter-

NEW TRAIN
-better serving West Texas Oil Fields
-faster time actual overnight service
Thru Sleepers

Abilene
San Angelo
Lubbock
El Paso
and West Texas
Oil Field
Points

SCHEDULE
GOING

Lv. Dallas	8:20 pm
Lv. Fort Worth	9:20 pm
Ar. Big Spring	5:00 am
Ar. Midland	6:23 am
Ar. Odessa	6:57 am
Ar. Pyote	8:30 am
Ar. Pecos	9:10 am

RETURNING

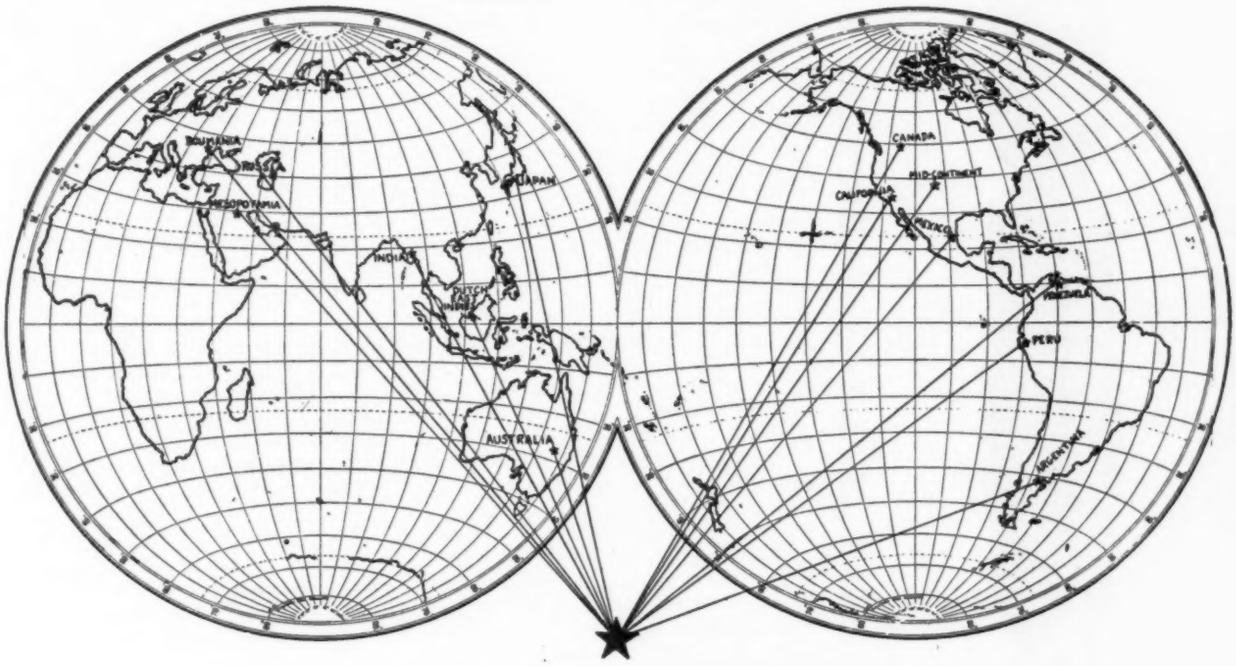
Lv. Pecos	6:30 pm
Lv. Pyote	7:08 pm
Lv. Odessa	8:33 pm
Lv. Midland	9:07 pm
Lv. Big Spring	10:30 pm
Ar. Fort Worth	6:55 am
Ar. Dallas	8:10 am

Connecting with Bus Service to the oil fields

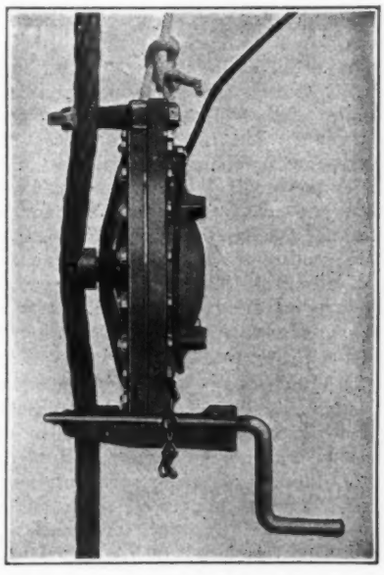
THE TEXAS AND PACIFIC RAILWAY
TEXARKANA SHREVEPORT EL PASO NEW ORLEANS

Geo. D. Hunter G.P.A.
Dallas Texas

Flying "Around the World" With The Martin-Loomis Automatic Recording Weight Indicator



MARTIN - LOOMIS Automatic Recording Weight Recording Indicators are being used on rotary drilling wells in every oil field in the world today. They have given the operator a safeguard against the danger of twist-offs, a constant guide during drilling, insuring straighter hole, a check on the service from all equipment and on the log of the well, and a permanent graphic time record of all drilling operations. This service and the dependability of Martin-Loomis equipment have won for it international success.



The Indicator can be installed by anyone in a very short time with the tools he has in his car.

The indicator has no moving parts. Simple in its operation and fool-proof.

Shipped complete with all gages, fittings and tubing ready to hang up. There are no moving parts to get out of order.

Reed Roller Bit Co., Houston, Texas, Distributors for Mid-Continent and Gulf Fields. And Thru Your Supply Company.

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Martin-Loomis Corporation

568 E. Willow St. Long Beach, Calif., U. S. A.

Say you saw it in The OIL WEEKLY

GRAY GRAY

The Gray Release Spear

An Organization
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to careful and superior workmanship . . . in originating tools to eliminate troubles that constantly confront the oil operator . . . . to improve tools already in use . . . . to work with the oil man who is actually engaged in oil production; with oil companies the production men of which are intelligently striving for safer, surer, and quicker methods.

GRAY
TOOL COMPANY
HOUSTON, TEXAS.

mittently until June 1, 1927. In all, 2009 tons of oil shale was run through the retorts; the yield of oil was 891 barrels, an average of 18.6 gallons per ton. The oil content of the shale charged to the retort ranged from virtually nothing to 75 gallons per ton on assay tests, although the highest average yield per ton for a single day was 42 gallons. As this yield could be varied by selective mining and arbitrary control of the grade of the charges, the total oil obtained is not a proof of the average grade of the shale in the deposit.

Approximately 150 barrels of the oil produced at the plant was sent to the Boulder, Colorado, laboratory of the Bureau of Mines for study in a $10,000 experimental refinery erected by the State of Colorado. About 100 barrels of the shale oil was sent to a number of oil refineries and laboratories for study. Results of these investigations will be given to the Bureau of Mines. Two 6000-gallon tank cars of the shale oil representing oil from each retort, were sent to the League Island testing plant of the Navy Department, where it will be tested to determine its suitability as a fuel for the Navy. In co-operation with the State of Colorado laboratory tests were continued at Boulder, Colorado, to determine the characteristics of oil shale and shale oil. Assay-retort tests of oil shale from various sections of the country were made, as well as tests of the oil obtained. Experiments on the nitrogen and sulphur compounds of oil shale were continued to determine the nature of these compounds and how they can be separated from shale oil. A number of nitrogen compounds were isolated and were studied to determine a possible use for them. A quantity of kerogen was separated from different oil shales and sent to the Berkeley, California, station for examination. Studies of the effect of weathering on oil shale were concluded. Work was completed on comparative analyses of oil shales and coals found on the public domain, and a report was submitted for publication. Methods for refining shale oil were studied, and also the treatment of distillates from shale oil in order to obtain products of good color and odor and to remove the constituents that on standing tend to form gums.

Technical Paper 370, The Bowie-Gavin Process, issued during the year, describes a process, devised by Bureau of Mines engineers, which has recovered oil successfully, though on an experimental scale, from surface bitumen, oil shale, and oil-soaked sand. The authors indicate the possibility of recovering oil on a commercial scale from similar materials.

A manual recently issued by the bureau, Bulletin 249, gives information on apparatus and methods for testing oil shale and shale oil.

Recent Articles on Petroleum and Allied Substances.—Monthly installments of the bibliography on petroleum and allied substances were issued by the San Francisco office. Two special reports were prepared covering articles on fire hazard and safety in the petroleum industry.

Control of Bentonites in Well Drilling. Water is generally used in drilling for oil or other mineral substances. If bentonite is penetrated it takes up water, swells, and makes trouble. Bureau investigators formed these conclusions: A temperature change from 1 degree to 94 degrees C. accelerated swelling but had little effect on the final volume of bentonite; petroleum, kerosene, and motor oil absolutely prevent swelling, but if water were present, would form troublesome emulsions; dilute solutions of various salts retard swelling, but each type of bentonite requires a saturated solution of a specific salt if the maximum effect and a firm residue are to be obtained; probably, therefore, salts can be found which will overcome drilling troubles from all bentonites, the salt and the quantity needed being specific for each variety of bentonite.

San Angelo Convention Scheduled for January

San Angelo, Texas—The third annual convention of West Texas oil operators will be held in San Angelo January 26 and 27, and arrangements are being made to offer an entertainment and business program that will attract a record crowd. This annual gathering of oil men is sponsored by the San Angelo Board of City Development, and in previous years wild game dinners have been given to the visiting oil operators, in addition to a variety oof outdoor sports. D. L. Hunter has been made chairman of the entertainment committee for the next convention.

Oil and Gas Leases

Marathon Fold
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5000 acres Val Verde County.

10,000 acres SW. Crockett County. 10 yr. paid up, adjoining big company tracts.

1500 acres along Pecos River.

1500 acres NE. Terrell County, paid up for 10 years.

Upton County scattered tracts.

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3000 acres eastern Irion County.

4000 acres Loving County.

Royalties in various West Texas Counties.

Prices and maps upon request. Time for examination allowed.

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